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ABSTRACT

A hearing was held to update information on progress toward immunizing the world's children against diphtheria, whooping cough, tetanus, polio, measles, and tuberculosis. Immunization programs are regarded as essential in the effort to break the infection-malnutrition cycle in children in developing nations. Witnesses at the hearing included Senator Bill Bradley of New Jersey, representatives of two Federal agencies, one international organization, and one nongovernmental agency. Each person and group contribute significantly to expanding access to immunization programs. (JD)

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IMMUNIZING THE WORLD'S CHILDREN BY 1990

HEARING

BEFORE THE

INTERNATIONAL TASK FORCE

OF THE

SELECT COMMITTEE ON HUNGER

HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

FIRST SESSION

HEARING HELD IN WASHINGTON, DC, NOVEMBER 14, 1985

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IMMUNIZING THE WORLD'S CHILDREN BY 1990

THURSDAY, NOVEMBER 14, 1985

House of Representatives,
International Task Force,
Select Committee on Hunger,
Washington, DC.

The task force met, pursuant to call, at 9:35 a.m., in room 210, Cannon House Office Building, Hon. Tony P. Hall (chairman of the task force) presiding.

Members present: Representatives Fazio, Dorgan, Leland, Evans, Morrison, Smith, and Roukema.

OPENING STATEMENT OF HON. TONY P. HALL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Mr. Hall. Good morning. I would like to welcome you all this morning to this meeting of the International Task Force of the Select Committee on Hunger. We are very glad to have Senator Bradley from the Senate, and our very distinguished chairman, Chairman Leland, who is chairman of the Select Committee on Hunger.

Ten years ago the international health community set the goal of immunizing all the world's children against the six leading killer diseases for children: diphtheria, whooping cough, tetanus, polio, measles, and tuberculosis. While significant progress has been made, it is clear that there are still enormous numbers of children that are dying every year.

Our task today is to learn about the progress that is being made to meet the goal of immunizing the world's children, and what additional efforts are going to be needed if we truly intend to have universal immunization by 1990.

Immunization programs are a vital step to breaking the infection-malnutrition cycle. When children are malnourished, they easily succumb to infectious diseases. When children succumb to infectious diseases, they easily become more malnourished. It has been said quite often in this committee that it really doesn't do us any good to feed a child one day, if the next day that child dies of measles. You have to break the cycle of malnutrition and infection. And part of breaking that cycle is the establishment of immunization programs.

The Select Committee on Hunger has been very supportive of primary health care programs since its beginning. Last year we succeeded in passing the global primary health care bill, which had as its goal saving 250,000 children from dying, and saving another 250,000 from being permanently impaired. We hope to remain in the forefront of working the relationship between alleviating hunger and improving health.

This year we have also called attention to the importance of vitamin A in nutrition programs and in health programs for many countries. Now, with the 1990 benchmark for achieving universal access to immunization, another essential component of primary health care, we want to see how the United States can step up its efforts in joining with the world community to meet this goal.

I have introduced a resolution, along with the chairman, Mr. Leland, and many Members of Congress. The resolution would direct AID to work with the Center for Disease Control and other appropriate Federal agencies to support the efforts on immunization. Sixty members have joined in the sponsorship of this, including the chairmen of the Foreign Affairs Committee, the Foreign Operations Subcommittee, the Budget Committee, and the chairman and the ranking minority member of this committee.

Senator Bradley, our first witness this morning, is the original sponsor of a very similar resolution in the Senate.

I know we are speaking for the American people when we support these important goals. We look forward to hearing from some of the key participants in enhancing these global efforts.

Among the witnesses today are a Member of the Senate, representatives of two Federal agencies, one international organization, and one nongovernmental agency. Each person and group is contributing significantly to expanding access to immunization programs. We look forward to hearing their remarks. We thank you for being with us today to talk about this most important subject.

Before we get to Senator Bradley, I would ask the chairman of the Select Committee on Hunger if he would have an opening statement.

[The prepared statement of Mr. Hall appears at the conclusion of the hearing, see p. 38.]

OPENING STATEMENT OF HON. MICKEY LELAND, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Chairman **Leland**. Thank you very much, Mr. Chairman, and thank you for your leadership on this issue. I, too, want to join with you in welcoming Senator Bradley to this side of the Capitol to provide his invaluable input. We look forward to your testimony, Senator Bradley.

I want to also welcome the other witnesses who are coming here to contribute to this very vital hearing. The contribution that they are making toward the goal of immunizing the world's children is absolutely astounding.

The challenge of child health and survival is one of the most exciting challenges in the effort to alleviate hunger in our world. There is no question that we have within our grasp the potential to prevent the death and disability of many millions of people, most of them small children.

We are especially interested in the prevention of six leading killers of children: measles, tuberculosis, whooping cough, tetanus, polio, and diphtheria.

This issue is a Hunger Committee issue because for many, many people, disease and hunger are inseparable in their lives. Small children who get barely enough to eat, quickly succumb to infections such as measles, a disease that kills 2 million children a year. Here in the United States, where the level of nutrition among children is so much higher, death from measles is a rare event.

Then, even for those children who survive disease, they are so weakened that lack of sufficient food often leads to more sickness, until they are carried away by a diarrheal episode or another killer disease which sweeps through their village or town. In the developing world, death from the leading six diseases claims 3½ million children a year.

I, along with other members of this committee, saw this happening before our very eyes when we visited Ethiopia last year. So many hundreds of children died, not only because they lacked food, but also because their weakened bodies could not resist the terrible diseases that swept through the population. We as a nation have responded generously with food to meet hunger needs, and we must also respond with basic health care, such as immunization programs.

We know that many of these diseases can be prevented. We know that hungry children whose lives are no longer threatened by these killing diseases are much more likely to grow up and become productive individuals in their nations' economies.

To prevent millions of needless deaths and disabilities is an exciting and worthwhile goal. And, in global terms, it isn't an expensive task. The World Health Organization states that children can be immunized for only $5 per immunized child. We look forward to the testimony this morning, and hope it will provide insights on how the U.S. Congress can participate in meeting the goal of immunizing the world's children in the next 5 years.

I thank you, Mr. Chairman.

Mr. **Hall**. Thank you, Mr. Chairman.

Before we get to the Senator, Mr. Evans, do you have a comment?

Mr. **Evans**. Mr. Chairman, I don't have any opening statement but I would ask unanimous consent that other opening statements for other members be included in the record if they so wish.

Mr. **Hall**. Without objection.

Thank you.

Senator Bradley, thank you for coming and being with us this morning. We look forward to your testimony and we thank you for your efforts in working toward this immunization goal.

STATEMENT OF SENATOR BILL BRADLEY, A U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator **Bradley**. Thank you very much, Mr. Chairman. I appreciate the chance to come before the committee on this extremely important issue and discuss with you why I believe it is so important to pursue the goal of universal access to immunization for the world's children by 1990.

On October 10 of this year, I, along with Senators Simon and Kasten, introduced Senate Concurrent Resolution 78 that calls upon the President to direct the appropriate Federal agencies to assist the World Health Organization and UNICEF in meeting the goal of universal access to childhood immunization by 1990.

The resolution now has 25 cosponsors in the Senate, and that number is going up. It is truly a bipartisan effort. Mr. Chairman, as you know, on the same day you introduced identical language in the House, the resolution that you referred to earlier in your opening statement.

Why do we need to do this? I think it is fairly obvious. On those rare but unfortunate occasions when the world is beset by tragedy—whether it is caused by an earthquake in Mexico, an air disaster in Japán, or release of toxic chemicals in Bhopal, or some other catastrophe—the sympathy and support of all Americans goes out to those people who are affected by the tragedy. For this we take great pride in our own country for always being ready, willing, and able to help in whatever way possible in these tragic situations.

Yet, yesterday, Mr. Chairman, a tragedy struck, which dwarfs all of those that I mentioned—dwarfs Bhopal, dwarfs the Mexican earthquake, dwarfs air disasters in Japan. In 1 day, 11,000 children died. There are no media accounts of this international disaster—for you see, this is a daily occurrence. Yet, 11,000 more children will die today, and tomorrow, and each day of this and every year. The total will be 4 million children per year.

But the saddest part of this tragedy is that it is avoidable. Those children are victims of six diseases; diseases for which effective immunizations exist. These diseases are polio, measles, whooping cough, diphtheria, tetanus, and tuberculosis—diseases that are virtually unknown in the developed world but they continue to ravage children in developing countries.

As stunning as this tragedy of 4 million vaccine-preventable deaths is, it is only a portion of the problem. An additional 10 million children die from potentially immunizable diseases. And at least another 5 million children who survive these diseases, suffer permanent physical and mental disabilities and handicaps. Or, they are so severely weakened that they more readily succumb to the ravages of malnutrition and diarrhea.

Hunger and disease are inextricably related, as both you and Mr. Leland have pointed out. Hunger and malnutrition weaken children and increase susceptibility to disease. Disease weakens children and increases susceptibility to malnutrition. This cycle simply has to be broken.

The effectiveness of immunization programs, as I stated, is evident in the reduced cases of these diseases here in our own country. But the finest example of the advantages of immunization is the worldwide effort in the 1970's that resulted in the total eradication of smallpox. It is estimated that the U.S. monetary contribution to this effort has paid itself back in saved medical expenses every 9 months. The payback in human suffering avoided is impossible to assess.

Mr. Chairman, the World Health Organization, the United Nations Children's Fund, and the United Nations General Assembly have called upon the nations of the world to commit the resources necessary to meet the challenge of universal access to childhood immunization by 1990.

Heads of state from around the world spoke of this worthy cause on the 40th anniversary of the United Nations on October 24 in New York City. Mr. Chairman, the response in our great country has been overwhelming. I know of at least 23 newspaper editorials that have encouraged U.S. participation in this global effort.

Also, Mr. Chairman, I share with you something that you already know, and the members of the committee know, that is, Congress clearly recognizes the importance of preventive health care. We have increased funding to the Agency for International Development for health purposes. We have created a Child Survival Fund for primary health care such as immunization and oral rehydration therapy.

And this year, in the foreign aid authorization, we mandated that AID should provide immunization for not less than 80 percent of all the children in those countries in which they have a program.

Mr. Chairman, there has been some criticism of AID's handling of the Health Program. At a time when Congress has repeatedly stressed the importance of childhood immunization and international health, the Agency has, unfortunately, reduced its health staff.

The question that we face today is not how worthy a cause is global immunization, but what is the appropriate role for the United States to play in this effort. Global immunization is not a goal to be achieved by 1990 and then abandoned. The most important contribution that the United States can make is to assist in the delivery, distribution, and use of vaccines by building locally sustainable systems with the technical capacity to provide the required immunizations. This includes training and developing a sufficient group of health professionals, indigenous to each developing country, to monitor and assess immunization programs. Local personnel could adapt strategies to reach the goal of preventing immunizable diseases.

In addition, America is experiencing a revolution in the field of biotechnology. We are developing new vaccines and making significant improvements in existing vaccines. We have to continue to perform, support, and encourage research and development, both in the public and the private sector.

Mr. Chairman, in the next hour, approximately 1,500 children will die. There will be no headlines to relay the magnitude of the problem. Today we simply have to commit ourselves to productive and meaningful roles for our Nation in the effort to save so many innocent children.

Mr. Chairman, I know that this is an issue that touches each of us personally. It is also an issue that is very visible to our constituencies. And it is also an issue that we have the capacity to do something about.

I believe that if you think that you are going to have 11,000 dying virtually every day, you are going to be called upon to make the kind of changes, and provide the kind of support that the resolution that we have introduced calls upon our Government to do.

As I said, this is a bipartisan piece of legislation. It is one that calls on our common humanity, and I think, frankly, we will respond.

[The prepared statement of Senator Bradley appears at the conclusion of the hearings, see p. 39.]

Mr. **Hall**. Thank you, Senator Bradley, for your very exciting testimony.

Are there questions of the Senator?

Mrs. **Roukema**. Mr. Chairman, I do apologize for being late. However, I was introducing one of my constituents before the Senate Banking Committee.

I would ask unanimous consent that my remarks be inserted into the record.

Mr. **Hall**. Without objection.

[The prepared statement of Mrs. Roukema appears at the conclusion of the hearing, see p. 40.]

Mrs. **Roukema**. I wanted to be here to both greet my colleague from New Jersey, Senator Bradley, and commend him for the fine work that he is doing in this area. I also want to pledge my support, not only to the chairman of the committee, Mr. Leland, and the chairman of the task force, Mr. Hall, but also Senator Bradley, in our efforts to accomplish our goal of immunizing the world's children.

Senator Bradley, I won't take any more time but I will say that you have presented an intelligent approach; you have expressed the poignancy of the problem. I certainly look forward to working with you on this.

I wonder, sir, were you part of Senate Resolution 227 that was quoted in the Washington Post today? This resolution recommended a joint effort between the United States and the Soviet Union to immunize the world's children.

Senator **Bradley**. I wasn't part of that resolution. I think it is not a bad idea to challenge the Soviet Union to deliver on their promises to help the people of the world. I think they might be reluctant to do so, and I see no better way to expose the true nature of that regime than to challenge them to do what they profess to want to do. So, if I am not on that resolution, I probably soon will be.

Mrs. **Roukema**. I just read about it in this morning's Washington Post. But in any case, we will all work together with you, Members in both the Senate and the House, to see that we set in motion proper programs to accomplish our goal.

Senator **Bradley**. Thank you.

Mrs. **Roukema**. Thank you very much, Mr. Chairman.

Mr. **Hall**. Thank you, Congresswoman Roukema.

Are there any other statements or questions?

Chairman **Leland**. Mr. Chairman.

Mr. **Hall**. Chairman Leland.

Chairman **Leland**. I would just like to commend the gentleman from New Jersey for his fine statement. I know that it is very difficult for Members of the other body to venture over here to participate in hearings like this, but when one is as committed as the Senator is, we certainly want to commend you and thank you very much for your participation.

Senator **Bradley**. I thank Chairman Leland for his leadership on the whole hunger issue and also for his comments.

I think, frankly, this is the kind of issue which if it bubbles up to the top of our agendas, commands its attention by its very vividness and its intensity. Again, when we look at our headlines every week or two, if there is a disaster—as I said, an earthquake in Mexico, or the Bhopal tragedy, or some airplane crash somewhere—it commands the headlines, and 200 or 300 people are killed, or maybe even 500 or 600 people are killed. Then we never really focus on the fact that 11,000 children die every day, and will die every day, for the foreseeable future until we achieve this goal of immunizing the world's children by the year 1990. It kind of gives us a little different view on what is important in what we do around here.

So I would make the argument that the effort involved in traveling across Capitol Hill was extremely small, but a great opportunity for me as well. Thank you.

Mr. **Hall**. Thank you, Senator. We look forward to working with you. I am sure as a result of this hearing and other hearings that we have had, that legislation will be forthcoming, and we want to join with you and with your leadership in the Senate in supporting this goal. Thank you.

The next witness is Dr. John Eriksson. He is the Deputy Assistant Administrator for Research in the Science and Technology Bureau of the Agency for International Development.

Dr. Eriksson is also the Coordinator for AID's Child Survival Task Force. Today he is here to tell us about AID's Child Survival Program and its immunization activities.

STATEMENT OF JOHN ERIKSSON, DEPUTY ASSISTANT ADMINISTRATOR, BUREAU FOR SCIENCE AND TECHNOLOGY, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Mr. **Eriksson**. Thank you, Mr. Chairman.

I am pleased to appear before this select committee to report on the Agency for International Development's plans to expand immunization programs as a part of our Child Survival Action Program.

Just 9 months ago, the Agency for International Development launched the Child Survival Action Program with the additional funds appropriated by Congress. As part of this program, AID developed new and expanded programs in 7 Asian and Latin American countries; awarded grants to U.S. PVO's for 36 projects in 17 countries; and funded multicountry agreements with both UNICEF and UNDP; as well as established new support projects in key areas such as immunizations, health financing, health commodities, and health communications.

We are preparing a full report on the Agency's fiscal year 1985 Child Survival Action Program, which we will be submitting to Congress next month.

I would like to take this opportunity to give you some of the highlights of our fiscal year 1985 program, and to indicate future directions for AID's child survival activities.

First, on a topic really different from the main focus today but extremely closely related, oral rehydration therapy. I would like to discuss ORT, which along with other efforts at diarrheal disease control, is a principal element of AID's Child Survival Program. Afterward, I will discuss AID's expanding immunization efforts.

It is well known that diarrhea with associated dehydration is the world's greatest killer of children. To draw attention to this problem, the United States joined with other donors and cooperating nations over 2 years ago to sponsor an International Conference on Oral Rehydration Therapy [ICORT].

At that conference, Mr. Peter McPherson, the AID Administrator, personally challenged the participants to work aggressively to expand the use of this inexpensive means of reducing child mortality.

AID's own financial support for ORT programs has increased markedly since that conference. Last year, for example, our expenditures on ORT exceeded $37 million, almost double the amount of the previous year.

This expanding program made it possible for the Agency to assist 50 countries and we will be reporting on some of these programs in our child survival report to Congress in December.

ORT in Egypt is perhaps one of the most impressive experiences we have had in supporting ORT in developing countries.

I wish to highlight the national control of diarrheal diseases project in Egypt, not only to demonstrate what can be achieved in a relatively short period, but also to make it clear that we use economic support funds as well as development assistance resources to further the Agency's child survival goals.

This project grew out of a pilot study in 1977 which showed a 40-percent reduction in deaths from diarrhea in several districts where ORT had been introduced and promoted.

With lessons learned from the pilot study, a 5-year campaign was mounted, beginning in 1984, to spread knowledge and use of ORT over the entire country. The goal of this campaign was to reduce mortality in children under 3 by 25 percent.

By the end of 1985, close to 90 percent of all health facilities around Egypt will be able to provide onsite rehydration services.

Pharmacists have been supplied with Egyptian-made rehydration packets and plastic measuring cups to sell for home use. In remote areas, women have been trained to deliver ORT and have been supplied with materials for distribution.

They become income earners and at the same time, contribute to the welfare of their communities. The project logo, chosen by mothers in focus groups, has become the most commonly recognized graphic advertisement in Egypt.

The early results are encouraging. The number of mothers who knew about ORT rose to 94 percent in 1984, and over half of them had used rehydration salts to treat dehydration.

But even more important, sample surveys shows that diarrhea-caused deaths in children under 2 have been cut by two-thirds since 1980, and infant mortality by nearly one-half.

Next week, you will be receiving from Mr. McPherson an invitation to participate in a second worldwide conference on oral rehydration therapy.

In this conference, we will be reviewing the record of a large number of national ORT programs, such as that of Egypt, as well as exploring new ways of improving implementation of ORT. We hope to see many of you at those meetings.

Immunizations: This is the second major element of AID's child survival program this year, and it is a primary focus for us in the current fiscal year. This year, AID's expenditures on immunization programs alone exceeded $21 million.

And we expect to increase our support for immunization programs significantly in the years ahead as our cooperation with national programs expands.

Each year, an estimated 3.5 million children in the developing world die of six immunizable diseases. That was graphically explained by Senator Bradley.

Beyond that, almost a half a million are crippled annually by polio, and hundreds of thousands more are disabled by the blinding, crippling, and debilitating complications of measles and tuberculosis.

The goal of AID's Child Survival Action Program, and, indeed, of the entire international effort to expand access to immunizations worldwide, is to set in motion a strategy that will assure the development of indigenous, self-sustaining programs to eliminate these diseases wherever possible.

In 1984, it was estimated that less than 20 percent of the children in the developing world were protected against all or most of these vaccine-preventable diseases. In fact, it has been estimated that immunization programs actually contacted nearly 40 percent of children, but almost half of those reached were not fully protected because of the high dropout rate common in most of the poorer developing countries.

Because immunization is so important and a cost-effective intervention, we have placed particular emphasis on helping countries expand their immunization programs. We realize that this will require sharply enhanced U.S. financial commitments to immunizations, commitments which we are willing to make.

Our goal with immunization, as with ORT, is not simply to deploy the technologies to vaccinate children in the next 5 years. Our goal is to help institutionalize these programs, so that they will continue to be available to children of future generations.

We recognize that U.S. encouragement and financial support for immunization programs cannot, by themselves, ensure the long-term success of these efforts.

For that reason, we seek to assure that vaccines will be available, delivery systems in place and functioning, and the population knowledgeable about the value of immunizations, regardless of whether there is an international initiative promoting immunizations, or, for that matter, substantial external resources.

Let me just touch upon one project which AID has been supporting for a number of years, and which is covered in my written presentation, the combating childhood communicable diseases [CCCD] project in Africa.

AID is now supporting immunization programs in approximately 51 countries. The $45 million CCCD project, in Africa is currently operating in 12 countries, and we expect to expand the program to 16 African countries this year.

Because we recognize that hard-pressed African governments can ill afford to hire new people and make new capital investments, the CCCD project operates on the premise that much better use can be made of existing facilities and resources.

Hence, CCCD is concentrating on retraining existing health workers and epidemiologists, on improving the supply chain to existing health facilities, on promoting health education, and on strengthening the management capabilities of national ministries of health.

Technical backstopping for the project is the responsibility of the Centers for Disease Control, which also spearheaded AID's contribution to the World Health Organization's successful drive to eradicate smallpox.

And let me add here that we have been in recent conversations with the Centers for Disease Control to expand our cooperation for an expanded immunization program worldwide.

I mention the CCCD project because it highlights our concern for establishing the infrastructure, including the trained personnel and the communications systems, needed to deliver basic immunizations against childhood diseases.

At the Bellagio II conference last month—we will be hearing from a direct representative of that group—the United States made it clear that immunization should not be seen as an end in itself, but a beginning, the beginning of sustainable health care systems available even to the poor and isolated rural families in developing countries.

Another example of the kind of immunization activity AID supports is our bilateral project in Ecuador. The project is designed to reduce infant mortality by dramatically increasing immunization coverage and expanded use of oral rehydration therapy throughout the country.

On October 26, the project was launched with a 3-day intensive national mobilization campaign to immunize children under 5 years of age. Initial results suggest that the number of children vaccinated may be at least four times that of previous efforts.

There are several aspects of this program in Ecuador which are extremely important. First, it reflects AID's efforts to coordinate immunization programs among a variety of sponsors. This project brings together such diverse institutions as local ministries of health and education, the church, the armed forces, UNICEF, and private organizations in a common humanitarian endeavor.

It has also received the very high-level attention of the President and the First Lady of Ecuador.

Second, the project emphasizes the technologies which are most cost effective in saving children's lives. While the first phase focuses most intensively on immunizations, mothers who bring their children in for vaccinations are also given oral rehydration packets.

ORT education will be intensified between December and April, the season during which diarrheal disease is most extensive. In subsequent phases, the program will focus on promotion of breastfeeding and nutrition monitoring.

Third, the project employs mass media to encourage participation in the national immunization days and to promote safe health practices.

AID is providing $4 million over a 3-year period for this National Child Survival Program in Ecuador. There are 30 Peace Corps volunteers working in remote areas, helping both by encouraging mothers to have their children immunized as well as helping with actual immunizations.

AID is fully involved and committed to a strategy to expand access to immunization. As we undertake this effort, we must deal with a number of technical and strategic issues.

For example, we are concerned that the call for universal immunization by 1990 may encourage unrealistic expectations, especially in those countries with very low coverage rates, a lack of basic infrastructure, and deteriorating economic conditions.

More importantly, while it is theoretically possible with an all-out push through special immunization days and a variety of high visibility special efforts, to boost coverage rates significantly by 1990, we have to be concerned with what happens in 1991 or 1992. Our goal must be to develop the sustained capacity to immunize children.

We are giving careful consideration to a number of strategic options through which we will target our immunization efforts in the years ahead.

We are, for instance, considering the advantages of targeting immunization efforts on children under 1 year of age. This is the age group for which the immunization will offer the greatest protection against childhood diseases. At later ages, many of the children may already have contracted these illnesses.

We may, as well, give greater emphasis in our immunization efforts to those vaccines where coverage rates lag behind, for example, measles and neonatal tetanus, although our goal will continue to be to build the capacity to deliver all available vaccines against the six major childhood diseases.

We will also continue our support for the development and/or improvement of vaccines which will make a significant difference in health care delivery in the years ahead.

In fiscal year 1985, AID committed approximately $22 million to vaccine improvements, including a measles vaccine that can be given to infants as young as 6 months, when it could be administered simultaneously with the third DPT shot. The present measles vaccine will not take until 9 months, by which time the child may already have been infected.

Second, a vaccine for whooping cough that eliminates the negative side effects that now discourage mothers from completing the DPT series.

Third, a genetically engineered oral vaccine for typhoid. I was very pleased to hear Senator Bradley mention the power of biotechnology here. This genetically engineered oral vaccine is certainly a case in point.

Typhoid has become resistant to antibiotics in several parts of the developing world, and we look to this new vaccine to overcome that problem.

An oral vaccine for cholera, the most severe of the diarrheal diseases, which affects an estimated 20 to 25 million children and adults worldwide.

A vaccine for rotavirus, the most common cause of diarrhea in the United States as well as in the Third World.

And finally, perhaps most promising of all, the development of prototype vaccines against malaria, which kills over 1 million children in Africa alone each year.

Our research efforts are integral elements of our overall strategy to promote access to immunization. In fact, we see our work on technology improvement as a bridge to increasing the efficiency and the effectiveness of service delivery.

In addition to new and improved vaccines, our research is focusing on improved means of diagnosing disease as well as improvements in delivery.

On the technical side, for example, AID is supporting a number of improvements that could make vaccines easier to deliver to outlying communities. We are giving particular attention to improving the heat stability of vaccines and other health commodities, in order to reduce dependence on a cold chain.

One of the most exciting discoveries in this field is Ezeject, a one-dose injectable developed and donated by Merck, Sharp and Dohme, a U.S. drug company.

Vaccines packed in the Ezeject remain potent for 3 weeks without refrigeration, thus eliminating the last and most expensive step in the cold chain. Furthermore, when mass produced, the Ezeject should cost only 3 to 4 cents, one-third the price of a disposable syringe.

The first 3,000 of these devices are presently being tested by nurses and community health workers in Guatemala's Measles Vaccine Program.

As for other aspects of our evolving immunization strategy, we will be focusing on selected countries where the host government and other donors alike are prepared to join us in making the long-term commitment necessary to build the institutional capacity to deliver immunizations and other life-protecting interventions.

Finally, we will be directing our technical advice and assistance to areas where we believe it will be most effective; among them, training, surveillance and information systems, communications and marketing, research, planning, and financial analysis.

In conclusion, I would like to emphasize that we are firm in our commitment to expand access to immunizations in AID-assisted countries. We expect to see vastly improved access to immunizations in the developing world in the years ahead, and we intend to continue to work toward that goal.

As President Reagan stated in a letter to the Secretary General Perez de Cuellar last month:

> Ensuring that children are protected from the scourge of disease is an important part of our commitment to the future. The children who are now being born will inherit the world that we have created.
>
> This century has seen the development of technologies which can offer protection from the diseases of childhood. The United States is pledged to do our part, so that the promise of protection offered by these technologies is part of our legacy for the future.

Thank you.

[The prepared statement of Mr. Eriksson appears at the conclusion of the hearing, see p. 41.]

Mr. **Hall.** Thank you, Dr. Eriksson.

Are you aware that in the foreign aid authorization bill of this year which has been signed by the President, there is a congressional directive that states that by the year 1991, AID should ensure that 80 percent of the children in AID-assisted countries be immunized.

First, are you aware of that? And second, what is AID doing to meet that goal?

Mr. **Eriksson.** Yes; I am aware of that provision, and we are, as indicated in my prepared remarks, intensively preparing a strategy which we think will represent a very substantial move forward to meet that goal; that is, the goal of access to immunizations for 80 percent of the world's children in developing countries.

As I indicated in my remarks, one consideration which we think merits serious attention is the very substantial deficiency in the physical infrastructure and in the institutions required in many poor, low-income countries to actually undertake this kind of effort.

And we think attention to infrastructure and institutions is extremely important. Therefore, we believe that a two-track approach is essential in trying to meet this objective: An approach that would concentrate on those countries where institutions and infrastructure are relatively more developed for focusing on delivery on immunizations; while at the same time strengthening institutions and providing support for improved technology that, in effect, will help us to compensate for weakness in institutions and infrastructure in poorer developing countries.

I think the Ezeject example in my remarks is one example. Heat stable vaccines, and we are hopeful that there can be some more developments and breakthroughs, is another example.

Improvements in vaccines that would reduce the number of doses, so as to help mitigate the problems with dropout. As I mentioned, 40 percent of children may be partially immunized, but only 20 percent are fully immunized, for a number of reasons. We think it is important to devote resources on both tracks, the technology and institutional improvement on one hand, and the actual service delivery on the other hand.

Mr. **Hall.** In the area of health assistance, when we talk about ORT and immunization, how does immunization rank? Is it a high or low priority?

And then I would like to know what percentage of the Health Assistance Program is allocated to immunization activities?

Mr. **Eriksson.** Taking the first question, I would rank immunization and ORT about equally high, probably higher than some of the other key interventions that we have identified and are promoting in our Child Survival Action Program, such as growth monitoring and breast feeding, although they are extremely important.

We estimate that 21 percent of the Child Survival Action Program, $85 million, supported immunization activities in fiscal year 1985. Of the $25 million specifically appropriated for a child survival fund, approximately 24 percent supported immunization services in developing countries.

Mr. **Hall**. Are you going to help lobby Congress next year for legislation on immunization? Because we are going to need your help.

Mr. **Eriksson**. Well, we are very supportive of this substantive thrust, and certainly we will work with you in any way we can.

Mr. **Hall**. Questions of Dr. Eriksson?

Mr. Dorgan.

Mr. **Dorgan**. Doctor, thank you very much for your testimony. On page 5, you indicated that an estimated 3.5 million children in the developing world die of immunizable diseases each year, and you pointed out that we have programs ongoing, spend a fair amount of money, move toward the same objective, I think, that we on the committee feel very strongly about.

Do you believe there is sufficient money at this point for what you want to achieve? And if not, how much in additional resources do you need to move toward the goals that we have established, as Congressman Hall pointed out, in legislation last year?

Mr. **Eriksson**. Well, certainly, the resource requirements for achieving a goal like 80 percent coverage by 1990 are very large, and much larger than resources now in sight.

On the other hand, we have to recognize that, first of all, the major part of these resources must come from the countries themselves. International donor experience is that about 80 percent of the costs of immunization programs are borne by countries themselves, and about 20 percent from external sources.

We think we can certainly make very substantial progress with the resources that we have. I might also add that in the current overall fiscal context of the Government, I would be concerned about further shifts of resources from one important area of our development assistance to another.

In particular, I am thinking about food and agriculture. As we have heard already, problems of child survival are closely interrelated. There is an interraction between hunger and malnutrition, on the one hand, and infection and disability from the kinds of diseases we hope to prevent through immunization programs.

And so, I think it is also important that as we look to future years, we keep in mind the need for a balance in our resources going to efforts to expand food production and employment and incomes in recipient countries, as well as resources to expand health services for child survival.

Mr. **Dorgan**. What is the total amount of money spent for immunization programs now?

Mr. **Eriksson**. Well, the figure I cited in my testimony for fiscal year 1985 was more than $21 million, and we do expect to expand the program further. The $21 million was for immunization programs concerned with delivery, not with technology improvement.

There was, in fiscal year 1985 another $22 million on the technology improvement side.

Mr. **Dorgan**. What do you expect that to expand to, what level?

Mr. **Eriksson**. We are in the process of developing this right now. I am not in a position to give you a specific amount.

Mr. **Dorgan**. It is a relatively small amount of money. The reason I ask about expansion is that we are talking about something called Gramm-Rudman here on the Hill, a formula approach to cutting spending, virtually all spending. Some of us are suggesting maybe we ought to make distinctions between different kinds of spending, $20 million for the kind of immunization program that you are talking about we are currently involved in, and the resource needs for the kind of program that Congressman Hall and myself and others believe we should be involved in really is not a great deal of money relative to the other things we do.

But even that money, my guess is, is under some threat.

Mr. **Eriksson**. Yes; in the current climate, I would agree with you. I would add another factor here. I am sorry I can't give you a precise figure, but we do intend to expand the resources, which we are devoting in this area. For example, AID's Administrator has indicated that we will use all resources available in support of immunization, not just development assistance resources, the dollar resources out of our health account, but also ESF, or Economic Support Fund programs, as well as local currency generations from Public Law 480, or food aid, and the Sahel account.

So we indeed intend to identify and apply all the instruments we have available for this task.

Mr. **Dorgan**. Thank you very much.

Mr. **Hall**. Any further questions.

Mr. Morrison.

Mr. **Morrison**. Mr. Chairman, just a quick question.

Mr. Eriksson, I am aware that existing immunization services are there, and it is perhaps a function of the willingness of parents to have their children take advantage of the services that do exist.

I see a quote from the State of the World's Children 1985, from the United Nations Children's Fund, that there is a significant dropout rate for those folks who don't participate initially and then for those who never come back for the second or third injections.

I guess my question is, How near would we be to the goal of complete immunization by 1900 if, in fact, parents followed through and utilized existing services that are now available around the world?

Mr. **Eriksson**. Well, again, I can't give you a quantitative estimate, although perhaps we could do some work on that for you.

I think it would undoubtedly result in significant progress toward the goal, although again, one has to look at the reasons for this dropout. I think I suggested that there were aspects of our currently available technology which tended to make for dropout.

It is not just a question of the fact that some immunizations require several doses, but some of the presently available vaccines cause side effects, such as fevers and headaches, which tend to discourage coming back for the full dosage.

Again, we believe that selected improvements in vaccines can help with that problem.

Mr. **Morrison**. Thank you.

Thank you, Mr. Chairman.

Mr. **Hall**. Thank you, Mr. Morrison.

Without objection, Dr. Eriksson, we would like to leave this hearing open so we can submit questions to you.

Mr. **Eriksson**. All right.

Mr. **Hall**. This may include questions or statements that come in later as a result of members being absent today.

Mr. Eriksson. Certainly. That would be fine.

Mr. Hall. Thank you very much.

Mr. Eriksson. Thank you.

Responses to Questions for John Eriksson

QUESTIONS SUBMITTED BY HON. TONY P. HALL

Question. How is AID expected to increase the level of resources allocated to immunization activities this fiscal year? Where will expanded programs and new programs take place? Please be as specific as possible.

Answer. In fiscal year 1986, AID intends to give top priority to expansion of immunization programs to complement our earlier efforts to promote oral rehydration therapy. This expansion will be funded not only with Child Survival and Development Assistance Funds, but also with Economic Support Funds and Public Law 480 local currency generations. In fact, we expect to double the resources going to immunization delivery in fiscal year 1986. In selecting specific country programs for additional funding, we will be giving particular attention to current infant mortality and immunization coverage rates, as well as the potential for significant impact on these rates.

We are currently formulating our country-specific plans for fiscal year 1986. We already know that an additional four African countries will begin immunization activities through the expansion of our Combatting Communicable Childhood Diseases projects with the Centers for Disease Control. We are also considering AID participation in an important multidonor effort to eradicate polio from the Western Hemisphere. In fiscal year 1985, we funded pilot measles vaccination programs in two states, and we are currently considering support for India's national plan for universal immunization. We have also begun discussions with the Centers for Disease Control on a major long-term project, which would pool the resources of CDC and WHO to improve immunization surveillance, information, and training programs worldwide.

Once the fiscal year 1986 allocations have been made, the Agency will be able to report more precisely on its expanded immunization programs.

Question. Could you describe how AID is involved in immunization efforts in the five countries which are accountable for approximately two-thirds of all vaccine-preventable deaths? India, Pakistan, Bangladesh, Indonesia, and Nigeria.

Answer. In India, AID has been supporting the strengthening of the rural health system in five states through its Integrated Rural Health and Population project. In fiscal year 1985, AID funded two pilot measles vaccination projects in India, one in Maharastra and one in Gujarat. We are currently planning for a major bilateral immunization project in three Indian states, beginning in fiscal year 1987 and are considering support for their countrywide accelerated immunization plan. This effort is likely to focus on measles, since measles immunization coverage is extremely low in India.

In Pakistan, AID is supporting a $20 million Primary Health Care project, one purpose of which is to support the expansion of the national Expanded Program of Immunization (EPI).

In Bangladesh, our bilateral efforts have focused on expanding coverage of ORT Programs. However, through a grant to Save the Children, a U.S. PVO, in fiscal year 1985, AID is supporting the expansion of immunization services in 17 rural villages in Bangladesh.

For the last 6 years, AID has been involved in a major bilateral program to strengthen the national immunization program in Indonesia. AID is also supporting a comprehensive health improvement project in Indonesia, which is currently involved in special campaigns to expand immunization coverage of neonatal tetanus.

In Nigeria, we are currently planning a major new bilateral health program in fiscal year 86. Last year, through a grant to UNICEF, AID supported training of some 250,000 nurses, health care workers, and medical professionals involved in immunization programs through private professional associations.

Question. What proportion of total immunization dollars will be allocated to research this fiscal year? Please list the specific types of research activities, including both field research and lab research related to vaccine development, etc.

Answer. In fiscal year 1986, we expect to obligate at least $40 million for immunization service delivery.

Mr. Hall. Our next two guests this morning will present their statements as a panel. According to U.N. protocol, representatives of international organizations are disallowed from reporting to a legislative or parliamentary body.

Therefore, I would like to make it clear that Dr. Joseph and Dr. Foege's appearance today before the select committee does not constitute a report to the Congress. Rather, this is an occasion at which we are able to profit from their information.

Dr. Joseph and Dr. Foege will be sharing in order to raise public awareness of UNICEF's and the Centers for Disease Control's contribution to international development.

We will hear both statements, and then there will be questions from the committee. Dr. Joseph, would you start first, then Dr. Foege? Thank you for coming.

STATEMENT OF STEPHEN JOSEPH, M.D., SPECIAL COORDINATOR, CHILD HEALTH AND SURVIVAL, UNICEF

Dr. JOSEPH. Mr. Chairman, thank you for the opportunity to appear before you today to present a statement concerning UNICEF's involvement in universal childhood immunization, the effort to bring the benefits of immunization against the major communicable diseases of childhood to all the world's children by the start of the next decade.

Alongside our partners in the World Health Organization, UNICEF has been involved for the past decade in the Expanded Program of Immunization, or EPI, a program that set the 1990 objective of universal child immunization, about which you already heard this morning.

The work of 10 years of EPI has yielded significant results. A few years ago, the annual death toll among small children from the EPI diseases was well over 5 million; today, it is somewhere between 3.5 and 4 million.

In my prepared testimony, you have a table that shows the latest estimates of deaths from tetanus, measles, and pertussis—or whooping cough—in the developing world.

But, of course, an equal number of young children are disabled annually; blind or deaf or mentally retarded from measles, paralyzed from polio, chronically ill with tuberculosis.

The vaccine-preventable diseases are especially devastating in areas where acute malnutrition is prevalent, such as in those areas of Africa for which this committee has shown such concern. In most of Africa and Asia, the vaccine-preventable diseases are responsible for as much as one-third of all infant and child deaths.

Now, until about 2 years ago, the EPI concentrated mainly on developing the infrastructure of national immunization services; training the managers and field staff, developing the logistics and cold chain; providing the necessary equipment and supplies.

Progress was steady but incremental, and the going remained especially tough in the least-developed countries of Africa.

If we estimate now that 60 percent of all children receive at least one immunization, only one-third complete their primary series of protection with DPT or polio, and the protection rates for measles and for tetanus—that is protection via the mother—for tetanus are even less, and there is a table, table 2 in my prepared statement, which shows our current estimates of immunization rates.

Now, the 60-percent first contact figure is impressive, but as impressive as it is, it became clear several years ago that unless there was some means of rapidly accelerating immunization programs around the world, the 1990 objective was out of reach.

And I might stop here to perhaps give an estimate to Mr. Morrison's question that perhaps if we took advantage of all services that are on the ground and available today, we probably could get to 60 to 70 percent total immunization. That would vary by country, of course.

But within the past 2 years, what has happened is a means of accelerating programs. And UNICEF is proud to be closely associated with this effort in country after country around the world, and we now feel that the 1990 UCI goal is quite reachable.

I have in my prepared statement a list, a tentative list, of countries who are participating in accelerated immunization programs, and that list is rapidly expanding.

Optimism is such that in June of this year, the Secretary General of the United Nations, sent a letter to all heads of state asking their commitment to this effort, and at the 40th anniversary celebration of the U.N. General Assembly just last month, over half of those heads of state who attended made specific reference in their remarks to this effort.

The Secretary General's letter is also attached to my testimony.

What has produced this ability to so accelerate EPI around the globe? In brief, it is due to an extraordinary increase in our abilities to employ the techniques of social mobilization and apply them to immunization programs.

These techniques have involved the use of mass media and community action, and they range all the way from the engagement of national-level political commitment and leverage, to the involvement of multiple sectors within government bureaucracies to the enlisting of diverse groups in the private sector and the general community; to the important creation of effective demand for immunization on the part of mothers and families.

This has reached the stage, or at least is rapidly reaching the stage where the drive for universal child immunization by 1990 is taking on the characteristics of a world movement, a global mobilization of awareness and effort.

This mobilization phenomenon, using a vast array of available methods of communications, from state-of-the-art to village technology, is providing the EPI acceleration with something that public health professionals have often reached for, but seldom achieved, the ability to transform health programs into social movements.

In 1985, this increased momentum has led to several tens of millions more children fully immunized than was the case in 1982 or 1983. In the past year or two, more than a score of countries have massively accelerated their EPI efforts, most of them with resultant large increases in the proportion of children fully immunized.

Perhaps 20 to 40 additional countries will undertake such acceleration in the next 12 to 18 months, and among them are the giant countries of China, India, Indonesia and Bangladesh.

Significant progress in accelerated programs has been made in such countries as Brazil, Colombia, Nigeria, Burkina Faso, and El Salvador.

A most important feature of this global mobilization is the diversity of specific approaches within an overall context of political and social mobilization.

Colombia, Brazil, and the Dominican Republic have emphasized national immunization days as a means to launch accelerated efforts. Turkey and Burkina Faso have adopted campaign approaches that see each effort extending over a week or a month.

Nigeria's astounding and outstanding achievements are based on a centrifugal radiation of district EPA efforts involving multiple sectors. I think that we will see that most countries over the next year will be adopting combination approaches using high-visibility initial campaigns, but tying these solidly to expansion of their health and immunization infrastructures.

One of the most important concerns underlying the issue of this campaign versus the infrastructure approach is the concern over the sustainability of the long-term growth and followup of immunization efforts, and derivative to that, of using immunization to foster broader primary health care activities.

Here, I think it can be argued that the experience of the past 2 years is an encouraging one. A number of countries, Brazil and the Dominican Republic being only two examples, have used single antigen campaigns, polio campaigns, as springboards to broader immunization efforts.

A number of countries, such as El Salvador in the midst of a war, and Burkina Faso, one of the least developed countries in the world, and Turkey, have used the initial campaign as a catalyst for realistic planning and action for expanded and permanent immunization infrastructures.

Other countries, and Colombia is the outstanding example here, have used the immunization campaign as a first step toward the articulation and implementation of a broader acceleration of primary health care.

In the past year or so, we have learned much, and we continue to learn at an accelerating rate, about the production, distribution, and cost parameters of vaccines and supplies for this global acceleration.

You will find in my prepared testimony estimates from UNICEF about the doses of vaccine required and the costs of these requirements from here to 1990.

We are finding that what we are needing to do is to develop a global matrix. It changes very rapidly, almost day to day, as different countries come in and start campaigns and need supplies for those campaigns.

We are confident that world vaccine production capacity can meet the demands, especially if we can program intelligently on a 4- to 6-month leadtime basis.

We are increasingly sure of our estimates that external donor costs to reach the 1990 objectives are in the range of $100 to $150 million annually over the next 5 years, that is additional to what we now have available.

This is a modest and achievable requirement in relative terms. In the area of mobilization of donor resources, the past year has been a very positive one.

Many bilateral and private agencies have generously increased their contributions to EPI efforts, both through their own programs and through the multilaterals.

In addition to the U.S. Child Survival Fund with which this committee is very familiar, the Italian Government is providing $100 million to UNICEF for immunization and related child survival actions in 29 countries.

In October, the Canadian Government announced the availability of $25 million for EPI activities in Commonwealth countries. Most notable in the nongovernmental sector is the Rotary Foundation's commitment to provide $120 million in their Polio Plus Program.

With proposals for mobilizing increased contributions from the private as well as the public sectors, I think we can be confident that our financial objectives are feasible, though it will require vigorous and prolonged effort.

All such evidence that we have so far points to some strong trends:

One, immunization coverage can be rapidly increased by accelerated programs.

Two, morbidity and mortality from vaccine-preventable deaths are nearing a sharp break downward on the curve in many countries, and this is particular dramatic with polio and particularly dramatic in the Latin American region.

And as you may know, the Pan American Health Organization has set, early this year, the goal of eliminating polio as a disease in the Western Hemisphere by 1990. We believe they will reach that goal.

The costs of national EPI programs are of the order of magnitude that can be borne by most countries, with perhaps 20 percent external donor assistance. That percentage may need to be increased in the poorest and least developed countries.

In the poorer countries, assistance will have to be continued well beyond 1990 to keep programs in place.

World vaccine production and logistics are adequate to the task. We must remember that the greatest demands will come in the next 2 years, because it is in the next 2 years that many countries will be trying to catch up with the under 5 population who is unimmunized, and get themselves to the plateau where they only need to immunize their under 1's.

Country management and training remain high-priority long-term problems, but are amenable to accelerated and innovative approaches.

And finally, political and social mobilization can move EPI up to the top of the national health and social development agenda, at least for the short term.

On this issue of campaign strategies versus the development of permanent infrastructures related to some of the things Mr. Eriksson was talking about, I think we realize now that campaign strategies seem to develop what I call a positive program momentum of their own.

They lead countries to invest significant resources in their own long-term immunization development that they would otherwise not have invested.

A successful immunization campaign seems to engender both desire and confidence on the part of governments, and to translate into both more aggressive performance by health ministries and into more persistent consumer demand by communities.

Immunization campaigns versus infrastructure development arguments are clearly becoming less relevant. We should and can keep our eye upon the apple of combined approaches, and we should insist on having the best of both possible worlds.

We should recognize that there are many roads to Rome, and that these global issues are always only worked out in specific country program solutions.

I have an attachment which unfortunately is so recently off the press that I only brought—was able to bring a few copies, but we have developed along with WHO a set of joint guidelines for planning principles for the acceleration of immunization activities, and I would be glad to share those with others here as soon as we have sufficient copies. I have a few copes for the members.

Mr. Chairman, UNICEF appreciates the attention that this committee and the U.S. Congress is giving to the children of the developing world, in Africa and elsewhere.

A great opportunity really does lie before us to protect these children against killer diseases which, though, only a pale shadow in Western countries, still devastate malnourished and frequently infected child populations.

This protection can be delivered cheaply and effectively. We have set ourselves 5 short years to reach our goal. With your help and the help of others, it can be done.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Joseph appears at the conclusion of the hearing, see p. 45.]

Mr. HALL. Dr. Foege.

STATEMENT OF WILLIAM FOEGE, M.D., EXECUTIVE DIRECTOR, TASK FORCE ON CHILD SURVIVAL

Dr. FOEGE. Thank you, Mr. Chairman.

I have a prepared statement, Mr. Chairman, and with your permission, I would insert it for the record and just summarize some of the main points.

Mr. HALL. Without objection, thank you.

Dr. FOEGE. Thank you.

In March of 1984, the Rockefeller Foundation hosted a meeting which was cosponsored by WHO, UNICEF, World Bank, and UNDP. The concern of that meeting was with all of the great technology we have today, why were 5 million children dying and 5 million being disabled?

And it was decided at that meeting that the question that had to be answered, how to speed up immunization, No. 1, and No. 2, how to improve the cooperation of all of the actors in this particular field, might be addressed by having a task force that consisted of the U.N. agencies.

So at that meeting, it was decided to have a task force made up of the five agencies there represented. This task force now meets quarterly, and at that time reviews what has happened and chooses priorities for the next months.

Some of the major and most important things that I think have happened in the last 18 months Dr. Joseph has already mentioned, and let me just pick out five or six of them.

I think it is extremely important that you have heard so many different numbers this morning about what are the immunization rates in the world. That shows how fast that number has changed.

Just a few years ago, only 10 percent of the Third World children were being reached. The latest estimate of WHO and UNICEF is the one Dr. Joseph gave, 60 percent of children are getting at least a first dose of something, so that 60 percent have access to a system.

The problem, of course, is how to get them to return for second and third doses.

Second, I would emphasize the figure that Dr. Joseph used that instead of 5 million deaths a year, we may well be down now to 4 million or even 3.5 million. And to have that change just in a couple of years is very dramatic. At the same time, it points out that we still have 3.5 million children dying.

And in a place like India, we still have 4,000 children a week getting paralytic polio. So the problem is still enormous.

Third, Dr. Joseph mentioned that we now have 20 to 40 countries that are about to accelerate national programs. UNICEF has played the key role in mobilizing social will here. This month, India will start its national drive on Indira Gandhi's birthday, and they will call this a living memorial to Indira Gandhi.

I think this is an important point that we now have political people interested and involved in countries. We haven't seen this kind of political interest in immunization since 10 or 15 years ago when people were interested in smallpox eradication.

The fourth point, the willingness to seek new objectives. On May 14 of this year, the Pan American Health Organization announced that this hemisphere will be free of polio by 1990.

That is a courageous objective that 2 years ago, people would not have considered.

Now, we think it is totally within the realm of possibility, and U.S. AID is contributing to that program.

The fifth point, the increase in resources. You have heard different figures on what are the resource requirements. Part of the problem here is a year and a half ago, we used the better figures available; that is, that it would cost between $5 and $15 to immunize a child.

On the basis of that, we said if the high side, $15 is used, it would cost $1.5 billion to immunize all children of the Third World.

On the one hand, that sounds like a great deal of money; on the other hand, it is less than we spend in this country each year just to advertise cigarettes, and I think that is a comparison we should keep making, how much we spend in order to ruin health, versus how much we spend in order to improve health.

We now think that the economies of scale may reduce this figure so that the range, instead of being $5 to $15, may well be $5 to $10 by the time more countries actually start. So the total figure may be going down toward $1 billion a year.

If 20 or 30 percent of this is required from outside, then we are talking about $200 to $300 million a year from the outside. And as Dr. Joseph said, the contributions of the last year make it clear that we probably have something in the neighborhood of $150 million a year committed for the next 5 years.

In addition to the groups that he mentioned, Rotary, U.S. AID, and so forth, I would also mention that the InterAmerican Development Bank is now making a contribution to polio elimination in this hemisphere.

So, we are increasingly hopeful that the resources are coming on line.

A sixth and last major point of the last 18 months has been the improved coordination in the Global Program. When Dr. Joseph mentioned this, this is a concrete example of the planning principles for accelerated immunization activities, a concrete example of the large U.N. agencies getting together and having a single strategy, rather than multiple strategies.

I would make it clear that the task force that was created 18 months ago has had nothing to do with all of these improvements. Rather, it was created because of all of the new interest in immunization, and has been—it is not a separate agency, but it has been a nice way to coordinate what has happened at the U.N. level.

The question came up, how important is immunization versus other things. I think the three most important interventions to improve Third World child health are immunization, oral rehydration, and family planning.

I think with immunization, we have some of the best and most concrete figures on the benefits versus the cost. In developing countries, it is easy to show that a dollar invested in immunization brings back about $10 in benefits.

There have not been many Third World studies, but the ones that have been done have shown a positive benefit-cost ratio; that is, you get back more than you invest.

Whenever you have a program that returns more than you invest, then if you don't fund it adequately, you have already made a decision to spend more for it, and still have the illness.

So that we have a positive benefit-cost ratio with immunization. We know how to deliver immunizations. We know that these programs can often be the foundation for other primary health care programs, and I think another good reason for having immunization, it prepares the infrastructure for the future when we will, within a few years, be able to give malaria vaccine, leprosy vaccine, hepatitis vaccine, herpes vaccine, and rotavirus vaccine.

It is important now to get the infrastructure to actually make use of those new vaccines when they become available.

Well, 18 months ago, the barrier was clearly lack of resources. At the present time, I would see our major barrier as being managerial capability, the capability to actually deliver these technologies.

The task force is now increasingly focusing on the managerial problems. We are also looking at the applied research problems. How do you improve the stability of a vaccine? How do you come up with schedules that reduce the number of visits required of each child?

How can one improve techniques for getting children back once they have had access to this system, how can you improve surveillance of the diseases and evaluation of the programs? And how can you improve communication between different programs in the world?

Toward that end, the task force was asked just recently to begin a newsletter, and I have supplied copies of our first newsletter, which will go to immunization workers throughout the world.

And we hope this will be a way of sharing experiences and a way of replicating things that work in one program. I have attached two items to my testimony.

One is a graph that I think is extremely important. It shows the relationship to infant mortality and population growth. We have a natural inclination to think that if you allow children to survive, you make the population problem worse.

On the contrary, if one uses the World Bank figures for 1984 for 119 different countries, as infant mortality went down, the population growth rates also went down.

One doesn't even have to understand how this works. One only has to know that is the bottom line, that if you can keep children from dying, you have a positive effect on reducing population growth rates.

The other item that I have included is a statement summarizing the array of CDC activities in global immunization. CDC provides long-term and short-term consultants for a variety of agencies, for U.S. AID, for UNICEF, for WHO.

CDC has, in the last 8 years, developed a very good domestic immunization program. I should note that 8 years ago, we could not have reached, in this country, the mandate of Congress, that is, 80-percent coverage, immunization coverage, for our children.

In fact, 8 years ago, for polio in this country, our immunization coverage level was below 65 percent. In 1977, this country started an initiative in immunization and a goal was set, first of 80 percent, and then later of 90-percent coverage.

At the present time, we have coverage levels of 97 to 98 percent by school entry.

This gives our immunization people great credibility, as they are used for consultants in other countries. CDC has also been involved in developing training programs in immunization, and has provided a top-level management course now to 1,500 people around the world, a middle-level management course to some 15,000 people around the world.

In summary, I think we can be greatly encouraged by what has happened in the last 2 years, and yet it has to be clear that there is much to be done.

Thank you, Mr. Chairman.

[The prepared statement of Dr. Foege appears at the conclusion of the hearing, see p. 51.]

Mr. HALL. Thank you.

It is encouraging to hear the testimony. And it is encouraging to hear the kinds of things that are going on, and the hope that you bring to this committee, knowing that mortality rates are going down.

But, of course, there is much more work to do, and that is what this hearing is all about. We thank you very much.

Both of you referred to what it would cost, the kind of resources that we need to meet this challenge and this goal by the year 1990.

There has been some conflicts in the estimates. Could you be a little more specific on that again?

Dr. JOSEPH. Let me try, Mr. Chairman. I think several things have changed since the estimates of a year ago, when at that time, we were estimating $1.25 billion or so over the total over the next 5 years external resources required.

Now, what has changed since then to bring the estimate down to where our current estimate I gave this morning is somewhere between $100 and $150 million a year over the next 5 years total external resources requirement.

In other words, we have gone from an estimate of about $1.25 billion to, say, $750 million external resources required.

Well, several things have happened. First, as Dr. Foege has mentioned, we are beginning to see economies of scale in the program, particularly in the large countries; I think we will see this very much as India comes on stream this year. We are certainly seeing it in China, which is launching a massive program to get themselves up to 85 percent in the next 2 or 3 years.

We are also beginning to see economies of scale in programs that are lower in cost.

Second, there are new resources that are now on the table. I made just a rough count just before the hearing, and I added up the $100 million from the Italian Government, the $120 million from Rotary. I think we can count on somewhere between $50 and $75 million coming in from some of the other smaller bilateral agencies.

Additional money will be forthcoming from the private sector. I think we can look forward to some contributions from the U.S. Aid for Africa and Live Aid and the type organizations which have raised large amounts of money in the private sector.

Also, I think, although I am not clear, either, on exactly what the current U.S. contribution toward immunization is within the U.S. AID health account, somewhere in the order of $25 or $50 million is probably included in pending legislation.

So, if you add up all the money already on the table, and then put in some factor for some orders of magnitude reduction in the estimates, it begins to narrow that gap between $1.25 and $750 million.

Also, I would say that we have not included in the $750 million or the $150 million per year over 5 years, we have not included research and development costs for new vaccines and new delivery technologies, and that would narrow the gap still further.

And finally, I would say that these figures are only estimates. As Bill Foege said a while ago, we work with a range of estimates per child fully immunized between $5 and $15.

Now, most of us think that in most countries, the minimal figure of about $10 per fully immunized child is the correct one. But again, this varies tremendously.

In Sahelian countries, for example, where the infrastructure is poorly developed, it may cost much more to immunize each child than it does in a country like Turkey, where the basic infrastructure is there.

Thank you.

Mr. HALL. Thank you.

Dr. Foege.

Dr. FOEGE. I might also say, Mr. Chairman, that if the figures don't change over the next few years, then we are not doing our job of being innovative, and they could change in either direction.

For instance, I could see economies with a decrease in the estimates if we are successful in coming up with a two-dose schedule for DPT rather than a three-dose schedule. That eliminates one visit per child.

I could see costs going up, on the other hand, if the Ezeject, which was mentioned earlier, comes into use, because the price of that, at least initially, may be higher than the delivery system currently used.

And I can see costs also going up if we are very effective in getting programs to the hard-to-reach group. With each percentage increase in immunization coverage, it becomes more expensive for each percentile, because you are now getting into harder-to-reach groups.

And so, all of these things will probably keep the estimates pretty fluid for the next few years.

Dr. JOSEPH. Could I come back once more on that, Mr. Chairman?

I don't think that Dr. Foege or I would want to give the impression of overoptimism, or that we don't need that additional $100 to $150 million annually, nor that the kind of initiatives that are being spoken of here for U.S. participation in that are in any way not critical.

The United States has always been recognized as a leader in biomedicine in general, and in particular in the immunization fields, with particular reference to the eradication of smallpox.

So the contributions that could be made from the United States toward that external donor requirement over the next 5 years are really of critical importance, both in stimulating the contributions of others, and also for the actual dollar value which they would contribute.

Mr. HALL. One last question from me, Dr. Foege, you mentioned the benefit-cost ratio of immunizations. Could you enlighten us about the percentages of what it costs to immunize versus what it costs not to immunize?

Dr. FOEGE. Mr. Chairman, let me say that in the United States, we have done some very good studies over the years to look at total benefits and total costs.

With measles, for instance, if you look at that in isolation, I think we probably have about $50 million a year going into measles immunization. If you would isolate that from the rest of the program and the benefits exceed $660 million in terms of children not being hospitalized, not requiring long-term institutionalization for mental retardation and so forth for a benefit-cost ratio of 11.9.

Then if you combine all of the antigens together, it is clear that we are realizing benefits of more than $10 for every dollar invested in this country.

I mention that in Third World countries, the studies have not been as complete, but I would cite a study in Senegal, where even though a small percentage of children actually made it to a hospital, therefore, they are out-of-pocket expenses for measles were not as great as they would have been if they had had more hospital facilities.

Even there, they saved more than $1 for every dollar invested in measles immunization. But there is a ripple effect. They also open more hospital beds for other conditions, so that people who want to build hospitals in Third World countries could get the net effect of building hospitals if they keep children with measles away from hospitals.

Mr. HALL. Are there any other studies that have come about, Third World countries other than Senegal?

Dr. FOEGE. There have been some overall ones looking at West Africa in general, but they have not been very detailed studies. There have been studies on smallpox eradication in a variety of countries, including India, showing a positive benefit-cost ratio.

We think that there is a need for this in order not so much to convince Third World countries to have immunization programs, but to show them what their benefits are.

I think benefit-cost studies are not very often used to argue people into a program, but it is nice to show afterward what the benefits have been.

Mr. HALL. So to kind of sum up what you have been saying, in the United States, for every dollar it takes to immunize a child, you save, in general terms, about $10 to $12.

Dr. FOEGE. That is right.

Mr. HALL. And overseas, in these various countries that we are talking about, in the very limited statistics that we have seen, you save $1 to $2 for every dollar spent?

Dr. FOEGE. That is right, plus the freeing up of hospital beds.

Mr. HALL. Further questions?

Congressman Fazio.

Mr. FAZIO. Thank you, Mr. Chairman.

I was interested in getting some more background as to the political factors that brought about the significant contributions from Italy, $100 million issue.

It seems like a rather substantial contribution, and one that is somewhat unique in the developing world. Could you tell us what brought that about? What kind of context that occurred in? What benefits may accrue where a large Italian pharmaceutical manufacturer is lobbying for this sort of thing?

I am trying to get some political and practical input.

Dr. JOSEPH. Congressman Fazio, if I knew the exact formula of how it came about, I would be very, very happy because it would make it easier to replicate elsewhere. But let me try to answer your question.

My first remark wasn't entirely facetious, because what is happening on the developing countries' side is somewhat similar: political leaders in the developing countries are seeing significant political benefit in putting their weights behind immunization campaigns.

The example of Colombia, where President Betancur really made this a very personal initiative; the example of El Salvador, where all sides to the conflict saw political benefit for themselves in endorsing an immunization; and the recent example in Turkey, where Prime Minister Ozal similarly made that point.

Now, Italy: the Government of Italy in the last several years, has taken a very positive approach, certainly as far as we are concerned, in UNICEF, and I think with the other multilateral agencies as well, there seems to have been a popular ground swell in Italy in favor of support to Third World development.

And on a per capita national income scale, perhaps, the contributions that the Italians have made to the world hunger programs and to our own programs in immunization and other child survival efforts, have really scaled up by factors of probably 10 in the last several years. I am not sure of the exact number. But it is very large.

I think this really represents a political response of the Italian Government to a ground swell of popular pressure and popular interest.

If that supposition on my part is true, there may be some echoes of that elsewhere in Europe and in North America, with the kind of phenomena that we have seen recently around USA for Africa, Live Aid, et cetera.

Two days ago, in New York, I was over at one of the major FM stations in New York. They are going to devote an entire 24 hours of their broadcasting this Saturday to a relief for hunger effort.

They are giving all their commercial time to commercials for contributions to end world hunger. That is a major FM radio station in the United States, and I assume that that represents some response, some perceived response to a popular ground swell.

I think that is here in this country, and I do think that is really what went on the Italian situation.

Mr. **Fazio**. Just a few more contributions in that kind of proportion from other developed countries in Europe alone would make up the differential.

Dr. **Joseph**. It certainly would. I would hope, parochially as well as otherwise, that it wouldn't only be European nations who would make up that contribution.

Mr. **Fazio**. Let me ask you a little bit more in detail about what happened in El Salvador. We are a major contributor, militarily and economically, to that country, and having visited there recently, I came away with the feeling that we were not putting enough money into development issues there, particularly the kind of economic assistance that is visible on the ground.

Could you give us some background about how the immunization campaign came about, why was it so successful across the spectrum in a very divided country?

Dr. **Joseph**. I will certainly try. In recent years, immunization status as well as health services in general in El Salvador have fragmented and declined as a result of the conflicts. And while it is not clear, the estimates again are very unclear, but probably less than 20 or 30 percent of children in El Salvador—and it was even hard to estimate the actual numbers of children in El Salvador—probably less than 20 to 30 percent were immunized.

I think as a result, again, this goes back to your political question, as a result of the really outstanding success and the political initiative of Betancur in Colombia, President Duarte became interested in a similar effort in El Salvador.

And when he discussed with Jim Grant, our executive director, Jim's response was:

> Well, that would be a wonderful idea, but we could be involved only on two conditions: One, that our partners, the World Health Organization, would be involved with us; and two, that it would be an effort that would reach all the children in El Salvador.

That latter condition was readily accepted by Duarte, but as you can imagine, it took some fancy footwork on all sides to work that out. But again, as I said in response to your former question, all the sides involved, the opposition, the current regime, the church playing a very important role as middle man, all saw the benefits to the children of El Salvador, but also to themselves politically.

And as a result, in the campaign that took place, somewhere around 350,000 in El Salvador were immunized. They used 3 immunization days spread a month apart, and during those 3 days, hostilities, to all intents and purposes, did stop in El Salvador. There were a couple of small incidents on the second day, but because all sides saw the benefit to them and the larger benefit to children, and benefits to children are something that is easy for people to see and to agree upon, they were actually able to stop hostilities and get the campaign done.

Now, as has been indicated earlier, a campaign by itself is not enough. The question now comes in El Salvador, how to continue those immunizations over the coming months and years. And the Salvadorans are working on this, and we think we have every expectation that they will work and be able to immunize their children at a much higher level of effectiveness than previously.

The campaigns often provide that kind of political and programmatic energy that then gets translated into a higher level of effort afterwards.

Mr. FAZIO. Thank you very much, Mr. Chairman. We may want to look at targeting some of our assistance to the completion of this initiative in El Salvador.

Thank you for letting me sit in on this very important hearing.

Mr. HALL. Congressman Leland.

Chairman LELAND. Thank you, Mr. Chairman.

The Select Committee on Hunger has focused attention on primary health care for the 18 months of its existence, because we believe that for millions of the world's children, infectious diseases interact closely with malnutrition to intensity the negative impact of each.

Do you believe that by preventing diseases for which vaccines are available, malnutrition can be reduced in both severity and extent among the world's children? I will ask either of you that.

Dr. FOEGE. I would say, without question, that one can improve the nutritional status of children if they do not have to have the disease of measles, if they don't have to have the diarrhea of measles and so forth.

We once calculated years ago how many tons of grain are consumed in West Africa each year just to support the fever of measles, because a child that has fever uses more calories because of this, the child goes on to die or to live.

If the child lives, those calories have to be replaced or else the child is now malnourished on top of everything else. So I think that the interaction—in fact, I have frequently said that the triad that the Third World has historically had to deal with has been the triad of infectious diseases, malnutrition and population pressures.

And they are so intertwined that they affect each other, so there is no question in my mind that immunizing children helps to improve the nutritional status.

Chairman **Leland**. Dr. Joseph, did you want to comment?

Dr. **Joseph**. I think I would just add to that that the clinical malnourished children that we see are only the tip of an iceberg, and most children in the Third World are really balanced on a narrow knife edge of malnutrition.

Most children are barely making it through nutritionally, and the ones that we see, that tip of the iceberg, are those children who have been knocked off that knife edge, and what it is that knocks them off is infectious disease, measles, diarrhea, other respiratory infections, et cetera.

So, to the extent that we can reduce those forces which knock children off that knife edge, more children are going to make it through.

Chairman **Leland**. Dr. Foege, your work at the Centers for Disease Control encompassed immunization programs for children in this country. What lessons can be learned from our success in achieving high immunization coverage rates in this country, and what more needs to be done?

Dr. **Foege**. There are many lessons that I think are applicable, two that I will mention at this time. No. 1 is to set a goal, rather than just say we will gradually improve. And I think Congress has very clearly set that goal for U.S. efforts.

When the goal was first set in this country, we were asked, the people that were involved in immunization, what is a reasonable objective? And I can remember Secretary Califano asking whether 80 percent was reasonable.

The head of the Immunization Program said we have never been able to achieve that. He said, I would hate to see that in my job description. The next day he did see it in his job description. And it was very important to have that kind of an objective.

No. 2, around the world, public health departments are simply too weak to accomplish this goal, and that was true in this country also. The public health departments could not reach 80 percent and then 90-percent coverage on their own.

It wasn't until the political figures got involved in the program here that resources came from schools, from voluntary groups, from other groups, and I think that is an important lesson overseas, that the public health departments are even weaker, and they will not accomplish this unless the political leaders are involved in it.

Chairman **Leland**. A concern which has been raised is that mounting debt burdens in less developed countries reduce the ability of many such countries to expand health expenditures.

However, some of the examples of successful immunization problems you have described, such as in Peru and Bolivia in South America, and Burkina Faso in Africa, seem to belie this point.

Can you comment, please?

Dr. JOSEPH. I would think that as money gets tighter, those programs which are more cost effective become even more attractive. Many of us in the primary health care field have been arguing for years for the need for more money to go to ambulatory facilities and preventive health care, rather than the disease palaces of hospitals.

And the immunization activities are really a case in point, or a sharpened case of point, of this. Countries, of course, are going to spend money on their health services. They need to spend money in their health services. It is one of the primary functions of any government.

One ought to look for those places where that money can be best spent. I think clearly, both on the effectiveness side and on the benefit-cost side, particularly in countries that have difficulty reaching their populations and staying in sustained contact with them, preventive services such as immunization are even more desirable in stringent economic times.

The tougher question, I think is, What about the sustaining of these programs? What about the continuation of these programs in difficult economic times? That is a tough question.

But I do believe, as I have said in my testimony, that the immunization programs and the benefits it yields to children and families, and the tangible benefits of not having polio and not having kids die of measles; these are such that they really do generate a kind of momentum within countries, and a determination to keep the programs going.

And as we, speaking collectively and globally, learn more and have better technologies and more cost-effective technologies to keep those programs running, I think we are increasingly in a better and better situation.

Dr. FOEGE. I would wholeheartedly agree that economic limitations make it even more important to do the right things. When I was giving the figures on the benefit-cost ratio—of 1 to 10, I didn't mention that there is only one health program that exceeds immunization in positive benefit-cost—and that is fluoridation, where you can get a return of $35 to $40 for every dollar invested.

But other than that, immunization turns out to be the single best health program that one can institute, and therefore, if one has to save money, you shouldn't go to that place to save money.

Chairman LELAND. Finally, Mr. Chairman, I beg your indulgence, concern has been voiced about the cold chain. That is, maintaining refrigeration for nonheat stable vaccines in remote and often inaccessible areas.

Can you please comment on the current state of the art in maintaining the cold chain?

Dr. FOEGE. I might just start by saying that we are encouraged by the fact that measles vaccine, which was one of the most vulnerable parts of the whole cold chain, has now been improved in stability to the point that measles vaccine could survive ordinary temperatures for weeks without deteriorating.

Polio vaccine is still the key problem with the cold chain. But I think we are seeing improvements in vaccine stability on the one hand, but we are also seeing a great deal of attention being given now to improving the cold chain itself.

Two examples: Instead of having to put all vaccine in refrigerators, in some places they now use their refrigerators to make ice cubes and then they can keep their vaccines in cold boxes.

Second, in Nigeria, they are doing some very innovative things, where instead of trying to have a refrigerator at every peripheral unit, they have their vaccine in central units better cared for, and then they take it out to the peripheral units in cold boxes.

So I think we are seeing improvements in the vaccines, but also in the system itself.

Dr. JOSEPH. When the measles vaccine—Bill can correct me if my figures are not quite right—when the measles vaccine first came into use in West Africa in the late sixties, early seventies, I believe it cost $1.13 a dose.

Now, we can deliver a measles vaccine, we can distribute it, UNICEF can distribute it, for about 6 cents a dose.

So, we have had tremendous improvements on the cost side. We have also had improvements on the technology side for the cold chain. Both improvements in the kind of equipment that is used, arranging all the way from sort of state-of-the-art experimentation now with solar-powered refrigerators, to much more simple field-applicable technologies, such as getting away from expensive powered refrigerators and using these lined cold boxes further out in the periphery.

The other point that I would add to what Bill said is that much of it does come down to improved management and the training that is required therefor. The training of refrigeration and cold chain technicians in individual African countries, for example; the training of better program managers who will use the resources that they have more effectively and efficiently are a way to improve the efficacy of the cold chain.

We are way ahead of point we were even 2 or 3 years ago. And it continues to move in a direction of technologic simplification at the field level and greater efficiency of the actual cold chain equipment.

Chairman LELAND. Very good.

Let me just thank both of you and particularly the work that your agencies have done over the years to help save lives of people around the world, but let me thank you, too, individually for the purpose of supporting the efforts here with the select committee. You have done an outstanding job, and I think that your testimony will move us further ahead as a Congress.

Thank you very much.

Dr. JOSEPH. Thank you.

Mr. HALL. I think we are going to stand in recess for a few moments. We are going to have to go and vote. We thank you again for coming and being with us.

Is Dr. Sever here? OK. If you will—it will take us about 5, maybe 10 minutes to get back here.

[Recess.]

Mr. HALL. Dr. Sever, who is here today in his capacity as a consultant to the Rotary International. Dr. Sever's official position is with the National Institutes of Health, and he has represented Rotary International in numerous international meetings.

He will describe the role nongovernmental organizations can play in immunizing the world's children by the year 1990.

STATEMENT OF JOHN L. SEVER, M.D., ROTARY INTERNATIONAL

Dr. SEVER. Thank you, Mr. Chairman and members of the committee. I appreciate this opportunity to appear before this committee on behalf of Rotary International, and to describe briefly the role that Rotary is taking in this to immunize the world's children by 1990.

I am speaking as a representative of Rotary International and none of the statements I make in any way are to be construed as representative of the NIH or NINICDS, my employer.

Rotary International is the world's first and most international association of service clubs. A Rotary club is a group of men representing a variety of businesses and professions in the community, whose purpose it is to provide humanitarian service, to encourage high ethical standards in all vocations, and to help build good will and peace throughout the world.

There are now over 21,000 Rotary clubs throughout the world, in 159 countries and geographic regions. The first club was formed in Chicago in 1905, but today more than two-thirds of the clubs are actually located outside the United States.

Club membership right now stands at around 993,000, and we expect to reach the 1 million member mark by February 1986. I give you these statistics to help you understand the evolution of Rotary's commitment to world immunization.

From the moment that Rotary became international in 1910, the association has sought ways to serve the world by furthering international good will and peace through friendship, cooperation, educational programs, and humanitarian programs.

Historically, the efforts in the service area were club to club activities, criss-crossing the globe. Many of these activities remain of that character, and clubs in one country help clubs in another nation with materials or technical assistance, and the international exchange of high school youth, college youth, and so forth.

In 1947, the efforts to expand to foundation of Rotary International sponsored its first program for international scholars, and exchanges of teams of young professionals has followed.

A matching grant program for club-to-club humanitarian and educational projects was also launched.

And as the network of clubs and activities grew, both in geographic scope and in numbers, so grew the opportunity for service.

Rotary began seeking larger challenges and projects beyond the initial scope of individual clubs or groups of clubs. And thus, in 1980, Rotary launched its first major immunization project to protect 6 million Philippine children against polio.

Until 1980, the Philippines had not engaged in routine immunization against polio. And Rotary discovered that it indeed could make a difference by providing this effort.

The World Health Organization has reported that the number of polio cases in the Philippines, which was once the source of 45 percent of all cases in the Western Pacific, dropped nearly 70 percent after this immunization effort.

Other polio immunizations in other countries have followed. To date, Rotary has allocated $12.33 million to protect more than 87 million children from polio in 26 nations.

I have provided you with a listing of the projects which are funded to date, and copies are available.

Seeing the potential for a significant contribution, Rotary has decided to make a commitment this year, 1985, on its 80th anniversary. A new Rotary Foundation program was created. And Rotarians, with public support around the world, would fund that program.

Experts would be sent to help plan and implement immunization campaigns. And Rotarians in project countries would themselves be mobilized and assist with the private sector in this action of immunization.

That is our plan. We call it Polio Plus. The plus is because Rotary, while devoting its major resources to the battle against polio, also wants to help, where feasible, in the expanded programs of immunization covering the six major vaccine-preventable diseases, measles, whooping cough, diphtheria, tetanus, tuberculosis, and polio.

Rotary knows that its contribution is just part of a greater effort. As a nongovernmental affiliate of the World Health Organization, it works closely with WHO, UNICEF, the Pan-American Health Organization, and other governmental organizations.

But it also knows that its contribution and the contribution of other nongovernmental organizations, are essential if UNICEF's goal of universal immunization by 1990 is to be achieved.

That goal must be achieved. As others have already testified, every year vaccine-preventable diseases kill approximately 3.5 million children and permanently disable at least another 3.5 million.

My testimony will take about 15 minutes. In that time, some 100 lives will be extinguished. And other 100 lives will be diminished by disability.

These children die not because there are no tools to prevent it. These children are disabled, not because there are no resources available. They die or become disabled because until now, we as members of the human family, have lacked the will to prevent these tragedies.

This is all changing now. In May, the Pan-American Health Organization declared that by 1990, polio would be controlled in the Western Hemisphere. Last month, UNICEF declared that all six major diseases could be controlled worldwide.

Around the world, national leaders are declaring a commitment to the health of their children. But an international partnership of private and public efforts is crucial for getting the job done.

In the more prosperous nations, the six vaccine-preventable diseases are well under control. The prosperous nations, through governmental and private efforts, can play a vital role to help improve health conditions in economically less developed countries.

These nations cannot effectively function when 100 out of every 1,000 of their children die before their first birthdays. They need help.

That help will produce healthy children, and healthy children become the productive adults needed to create social and economic stability, which in turn will help build a more peaceful world.

I would just like to tell you about the Rotary pledge as a nongovernmental organization, working with other agencies. This describes what we feel the public sector, and this is what Rotary has pledged to do.

It may serve as a model for others. First, Rotary will provide all of the polio vaccines necessary for up to 5 consecutive years for any approved national or regional immunization program, either as part of annual days of immunization against polio, or through other delivery tactics which are in overall support of the WHO expanded program on immunization, the EPI Program.

Second, Rotary will make available to any less developed country, upon invitation, experts to help assess, plan, implement, and evaluate national days of immunization against polio.

In each country targeted for such campaigns, a committee of Rotarians, in conjunction with Rotary's expert team and national and local health officials will seek to motivate and utilize resources of the private business and professional sectors to assist in the campaigns.

Third, Rotary will support, where possible, the expanded program on immunization to fight other controllable diseases. An example of this support is soliciting, transporting, and distributing to developing nations excess but potent vaccines from pharmaceutical firms.

The work has already begun. Our first expert, Mr. Mejico Angeles Suarez, the vice minister of public health of the Dominican Republic, was sent to Paraguay at the request of that Government to help organize the National Immunization Day Program.

The first of two scheduled in 1985 took place on September 28 of this year. Surveys had revealed that there were approximately 275,000 children under the age of 4 who should receive the vaccine in Paraguay.

On September 28, more than 475,000 children, including many over the age of 4, were immunized. The local Rotarian who coordinated the support effort from the voluntary contributions in the project is Senor Jose Martinez Yaryes.

In a report to Rotary International, Mr. Martinez listed a few organizations which contributed to this effort. The ministries of education and the interior enlisted the cooperation of teachers and provincial governors in getting the Vaccine Program accomplished.

The Military Air Transport transported the material. The Association of Advertising Firms in Paraguay prepared a publicity campaign. The Coca-Cola Co. printed posters and leaflets.

The Association of Pharmaceutical Manufacturers provided trucks and transporting materials. Other local firms provided headquarters space, photocopy equipment, and even coffee for some of the workers.

The U.S. Agency for International Development provided some of the office equipment for that campaign.

More than 19,000 volunteers help implement that particular project. They included Rotarians, their wives, members of Lion's Clubs, Girl Scouts, the Paraguayan Red Cross, the Rural Association of Paraguay, and the Junior Chamber of Commerce.

The second annual immunization day is set for this coming Saturday, the 16th of November. Rotary support, help in mobilizing the private sector, and over $90,000 worth of polio vaccine will continue over the next 5 years, after which the Paraguayan Government will assume responsibility for maintaining the Immunization Program.

I have provided details on this project to illustrate how Polio Plus works, and the key role that the private sector plays in carrying out this kind of project.

This project only distributed polio vaccines. In other projects already under way in Nigeria, Sudan, Turkey, Rotary is providing polio vaccine and private-sector support for expanded programs of immunization.

Rotary is an organization of volunteers, and volunteers know how to recruit other volunteers. It is in this aspect of the current immunization scene, more formally known as social mobilization, that has led UNICEF, PAHO, and other world organizations and governments to believe that the goal of universal child immunization by 1990, first set by the World Health Organization in 1974, may be achievable.

Rotary will raise $120 million to fund the Polio Plus Program. This fund-raising goal, by far the largest in Rotary's history, expresses Rotary's commitment and reveals Rotary's belief in the private sector's concern and willingness to support worldwide immunization with money, as well as time, energy, expertise, and other resources.

In conclusion, Rotary believes that it can raise the money and launch the projects which will comprise a significant contribution to the efforts to achieve universal child immunization by 1990, a significant contribution but not nearly enough for the whole task.

So, Rotary hopes that what it is doing will serve as a model for other private organizations, and that a powerful partnership will soon be formed between the private sector and the public sector of governments of all nations to immunize their children.

We cannot wait any longer. I have spoken for approximately 15 minutes; 100 children have died, and 100 children have been disabled.

Thank you.

[The prepared statement of Dr. Sever appears at the conclusion of the hearing, see p. 66.]

Mr. HALL. Thank you, Doctor.

I hadn't realized that Rotary International was so involved with immunization. That is exciting to listen to what you have done in various countries, especially the Philippines and Paraguay. I hope that your tale can be told to other colleagues and other organizations like yours around the country. It is exciting to hear what you are doing.

Dr. SEVER. Thank you.

Mr. HALL. In a campaign like this, we are talking about quite a bit of money coming from Rotary. How do you raise your money?

Dr. SEVER. We first publicize the campaign extensively through the various journals and publications of Rotary itself. For the total funds of $120 million, we expect that through the contributions of the members of the organizations itself, we will certainly be able to raise $60 million within the next few years.

With good publicity and information about a need for a program of this type, we expect the private sector and voluntary contributors will come forward when the need is specified and an objective can be set as to a time frame in which that can be accomplished.

In addition, we, through the private sector, will be approaching other financial sources, such as industries, businesses, and professions, which are associated with the members of the organization. This should help us achieve the goal of $120 million.

The most important factor has been to identify the specific goal, within a target period, to tell people why this need exists and how we can resolve it. It has been our experience that we can then be very successful in achieving the objective of the fundraising and involvement of the private sector in the country where the immunization is to take place.

Mr. HALL. That is an incredible amount of money for an organization like yours. It is just staggering to think of that kind of money.

How do you channel your money and your efforts? Do you go specifically through the groups that is in the country? For instance in Paraguay, do you set your own organization, or do you go through a private voluntary organization?

Dr. SEVER. In the example of Paraguay, the first contact was made by the Government of Paraguay. They indicated that they were interested in attempting an immunization program. We then, through the local Rotarians in the country, investigated how Rotary might best assist in the effort, because the government needed considerable assistance in order to achieve that goal.

We made contacts with UNICEF, the Pan-American World Health Organization, and the other agencies which would be involved in that important type of effort.

We then had direct visits with the Government of Paraguay to discuss and outline the approach which would be used. Dr. Albert Sabin was our consultant, the developer of the polio vaccine, outlined a national campaign approach, which was accepted by the Government of Paraguay.

Then with that agreement, with the concurrence of the other agencies and the Ministry of Health of the Government of Paraguay, we provided the vaccine and the other support and actually sent one member of the task force from the Dominican Republic to assist in organizing that massive campaign.

Their approach, to start immunization, of course, is quite different from which we use to maintain immunization once we have accomplished a rather extensive level of immunization in the country, and that is why they chose to use two national days of immunization in attempting to immunize all children under 5 years of age during those two specific periods.

Mr. HALL. Well, I want to thank you for your testimony. You and your organization are really an encouragement to all of us, and you have given us a challenge. It is a challenge that we should meet, and it is a challenge that we are going to do our best to meet.

And with everybody pitching in like you have, I feel very hopeful for the future. It is exciting to listen to the statistics, because I remember last year, I was quoting 5 million children die per year. Now it is down to somewhere between 3.5 and 4 million, and that is exciting. That is a real decrease in just a year. Just think what we can do if we meet the challenge that UNICEF has issued, Rotary International has issued. It is something that I know this committee is committed to.

Thank you for coming.

Dr. SEVER. Thank you very much.

Mr. HALL. That concludes the meeting of the International Task Force today. And thank you all for being here.

[Whereupon, at 12 noon, the select committee was adjourned.]

[Material submitted for inclusion in the record follows:]

PREPARED STATEMENT OF HON. TONY P. HALL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO AND CHAIRMAN, INTERNATIONAL TASK FORCE, SELECT COMMITTEE ON HUNGER

Good morning, I would like to welcome you all this morning to this meeting of the International Task Force of the Select Committee on Hunger. Our topic will be on the goal of immunizing the world's children by 1990.

Ten years ago the International Health Community set the goal of immunizing all the world's children against the six leading killer diseases for children—diphtheria, whooping cough, tetanus, polio, measles, and tuberculosis. While significant progress has been made, it is clear that there are still an enormous number of children who die every year from these easily preventable diseases.

Our task today is to learn about progress being made to meet this goal, and what additional efforts are going to be needed if we truly intend to have universal immunization by 1990.

Immunization programs are a vital step to breaking the infection-malnutrition cycle. When children are malnourished, they easily succumb to infectious diseases. When children succumb to infectious diseases, they easily become more malnourished. We are very much interested in breaking this cycle, and believe that universal immunization programs for children are essential to that effort.

The Select Committee on Hunger has been supportive of primary health care programs since its beginning. In 1984 we were successful in our efforts to increase funding for the A.I.D. health assistance and nutrition assistance programs, and in establishing a child survival fund. This year we have called attention to the importance of vitamin A, both in nutrition programs and in health programs for many countries. Now, with the 1990 benchmark for achieving universal access to immunization, another essential component of primary health care, only a few years away, we want to see how the United States can step up its efforts in joining with the world community to meet this goal.

I have introduced a resolution, House Concurrent Resolution 211, which calls on the President to direct A.I.D. to work with the center for disease control and other appropriate Federal agencies to support this effort. Already over 60 Members of the House have joined me in support of this resolution, including the Chairmen of the Foreign Affairs Committee, the Foreign Operations Subcommittee, the Budget Committee, and the Chairman and ranking minority member of our committee. Senator Bradley, our first witness this morning, is the original sponsor of a very similar resolution in the Senate, which also enjoys wide support in that body.

I know we are speaking for the American people when we support these important goals. We look forward to hearing from some of the key participants in enhancing these global efforts. Among the witnesses today are a Member of the Senate, representatives of two Federal agencies, one international organization, and one nongovernmental agency. Each person and group is contributing significantly to expanding access to immunization programs, and we look forward to hearing their remarks. Thank you for being with us this morning.

PREPARED STATEMENT OF SENATOR BILL BRADLEY, A U.S. SENATOR FROM THE STATE OF NEW JERSEY

Mr. Chairman. I congratulate you and the committee for scheduling this important hearing. I appreciate the opportunity to discuss with you why I believe it is so important to pursue a goal of universal access to immunization for the world's children by 1990. On October 10th of this year, my distinguished colleagues, Senators Kasten and Simon and I introduced Senate Concurrent Resolution 78 that calls upon the President to direct the appropriate Federal agencies to assist the World Health Organization and UNICEF in meeting the goal of univeral access to childhood immunization by 1990. This Resolution now has 23 co-sponsors in the Senate, and it is truly a bipartisan effort. On the same day Congressman Hall submitted an identical resolution.

Mr. Chairman, on those rare but unfortunate occasions when the world is beset by tragedy—whether caused by an earthquake in Mexico, an air disaster in Japan, a release of toxic chemicals in Bhopal, or other catastrophes—the smypathy and support of all Americans goes out to the affected people. For this we can take great pride in our own country for always being ready, willing and able to help in whatever way possible.

Yesterday, Mr. Chairman, a tragedy struck which dwarfs all of those I've already mentioned. In one day eleven thousand children died. There are no media accounts of this international disaster, for you see this is a daily occurence. Yet, eleven thousand more children will die today and tomorrow and each day of this and every year. The total will be four million children per year. But the saddest part of this tragedy is that it is avoidable. Those children are victims of six diseases; diseases for which effective immunizations exist. These diseases—polio, measles, whooping cough, diptheria, tetanus, and tuberculoisis—are virtually unknown in the developed world but they continue to ravage children in developing countries.

As stunning as this tragedy of 4 million vaccine-preventable deaths is, it is only a portion of the problem. An additional 10 million children die from potentially immunizable disease. And, at least another five million children who survive these diseases suffer permanent physical and mental disabilities and handicaps, or are so severely weakened that they more readily succumb to the ravages of malnutrition and diahhrea. Hunger and disease are inextricably linked. Hunger and malnutrition weaken children and increase susceptibility to disease. Disease weakens children and increases susceptibility to malnutrition. The cycle must be broken.

The effectiveness of immunization programs, as I stated, is evident in the reduced cases of these diseases here in our own country. But the finest example of the advantages of immunization is the worldwide effort of the 1970's that resulted in the total eradication of smallpox. It is estimated that the U.S. monetary contribution to this effort has paid itself back in saved medical expenses every nine months! The payback in human suffering avoided is impossible to assess.

Mr. Chairman, the World Health Organization and the United Nations Children's Fund the United Nations General Assembly have called upon the nations of the world to commit the resources necessary to meet the challenge of universal access to childhood immunization by 1990. Heads of States from around the world spoke of this most worthy cause on the 40th anniversary of the United Nations on October 24th of this year in New York City. And, Mr. Chairman, the response in our great country has been overwhelming. I know of at least 23 newspaper editorials that have encouraged U.S. participation in this global effort.

Mr. Chairman, Congress recognises the importance of preventive health care. We have increased funding to the Agency for International Development for health purposes. We have created a Child Survival Fund for primary health care such as immunization and oral rehydration theraphy. And this year, in the Foreign Aid Authorization we mandated the Agency for International Development to provide immunization for not less than 80% of all the children in those countries in which they have a program. Mr. Chairman, there have been some criticisms of the AID's handling of it's health program. At a time when Congress has repeatedly stressed the importance of childhood immunization and international health, the Agency has reduced its health staff.

The question that we face today is not how worthy a cause is global immunization but what is the appropriate role for the U.S. to play in this effort. Global immunization is not a goal to be achieved by 1990 and then abandoned. The most important contribution the U.S. can make is to assist in the delivery, distribution and use of vaccines by building locally sustainable systems with the technology capacity to provide the required immunizations. This includes training and developing a sufficient group of health professionals, indigenous to each developing country, to monitor and assess immunization programs. Local personel could adapt strategies to reach the goal of preventing immunizable diseases.

In addition, America is experiencing a revolution in the field of bio-technology. We are developing new vaccines and making significant improvements in existing vaccines. We must continue to perform, support and encourage research and development, both in the public and private sector.

Mr. Chairman, in the next hour, approximately 1,500 children will die. There will be no headlines to relay the magnitude of the problem. Today we must commit ourselves to a productive and meaningful role for our nation in the effort to save so many innocent children.

Prepared Statement of Hon. Marge Roukema, a Representative in Congress From the State of New Jersey

Mr. Chairman: I want to commend you for convening this hearing today and for your commitment in seeking better health and nutritional care for all the world's children, especially those most in need. We have several distinguished witnesses here, who will tell us of the efforts to combat and eradicate six dangerous childhood diseases: tuberculosis, diphtheria, tetanus, whooping cough, polio and measles. I would like to pay a special tribute to my colleague from New Jersey, Senator Bill Bradley, who has ventured here from the other body as our first witness today and whose efforts on behalf of childhood health are well known.

Mr. Chairman, a year ago this month I traveled to Ethiopia as a member of a congressional fact-finding delegation, with a number of members of this committee. The shock of seeing Miasmic men, women and children in the grip of starvation was a soul searing experience. We could not prevent this tragedy, which was due in large part to history, civil strife and drought. But there is another tragedy continuing this very day, a malevolent and insidious one. Millions of children die each year from diseases that are entirely preventable. It is this needless human suffering that is the greater tragedy, because we have the immunizational know-how to stop these diseases right now.

The statistics on the six childhood diseases I mentioned and their effects on third world children are well known to many here, but I would like to reiterate just a few for the record. Only 2 children in every 10,000 die of measles in the United States, yet this affliction kills 3 of every 100 children in lesser developed countries. The percentage of children immunized against all six diseases in industrialized nations is more than twice as high as for those in the developing world. In 1984, less than 20% of the developing world's children were protected against all or most of these infections. Measles is a disease that kills 2 million children a year, tetanus 800,000 and whooping cough 600,000. These numbers are appalling and very discouraging. I look forward to testimony by today's witnesses that will help inform us as to the strategies that will reduce these numbers significantly.

Last month I joined twelve of my colleagues, including Mr. Leland and Mr. Hall, as original cosponsors of H. Con. Res. 211. This resolution calls upon the President to direct the Agency for International Development to work with international health organizations in achieving the goal of universal access to childhood immunization by the year 1990. This is a formidable challenge and raises specific questions that I hope our witnesses will address. First, we must know what the needs are in developing countries, in terms of vaccines, medical personnel, logistics and education. Second, we need to ask how we can implement a program that is sustainable, especially in the poorest countries, so that generation after generation can enjoy the benefits of immunization. And finally, we must ask what resources and efforts are necessary to reach our goal.

The costs of immunizing a child are small when you consider that the results pay huge dividends in terms of reduced future health-care costs, reduced infant mortality and healthier children. High level political support is essential if we are to make progress in immunizing all the world's children. If other countries, international organizations, and private voluntary organizations maintain a commitment to work with the United States, we can save these children. A redoubling of efforts by all the parties involved will set us on the road to reaching our goal—universal immunization.

[From the Washington Post, Nov. 14, 1985]

FOR THE RECORD

From a Senate resolution last month:

Whereas six diseases—measles, diphtheria, tetanus, whooping cough, tuberculosis and polio—each year ravage the children of the world, killing some 5 million and leaving an equal number disabled;

Whereas the medical technology now exists to immunize the world's children against these diseases at an estimated cost of $5 per child—a total cost of $500 million for the 100 million children born in the developing countries each year;

Whereas medical studies estimate that such immunization could reduce child mortality around the world by as much as one-half;

Whereas reduced child mortality is crucial to attaining levels of economic development associated with reduced population growth;

Whereas in the 1960s and 1970s the United States and the Soviet Union cooperated effectively together and with other nations in a United Nations program which, by 1980, ended the scourge of smallpox . . .;

Resolved, That: the United States and the Soviet Union should immediately undertake a formal commitment to initiate, using their own resources and those of other donors and appropriate multilateral agencies, a joint effort to bring the benefits of immunization to all children of the world by the year 1990;

This joint effort should be accompanied by the initiation of studies to anticipate the demographic effects of such increased immunization; and

This joint world immunization effort should be undertaken in a spirit of common dedication to a transcending humanitarian purpose, and with the practical hope that such constructive collaboration may also serve as a model for further superpower cooperation.

PREPARED STATEMENT OF JOHN ERIKSSON, DEPUTY ASSISTANT ADMINISTRATOR, BUREAU FOR SCIENCE AND TECHNOLOGY, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Good morning. I am pleased to appear before this Select Committee to report on the Agency for International Development's plans to expand immunization programs as a part of our Child Survival Action Program.

Just nine months ago, the Agency for International Development launched the Child Survival Action Program with the additional funds appropriated by Congress. As part of this program, A.I.D.: developed new and expanded programs in seven Asian and Latin American countries; awarded grants to U.S. PVOs for 36 projects in 17 countries; funded multi-country agreements with both UNICEF and UNDP; and established new support projects in key areas such as immunizations, health financing, health commodities, and health communications.

We are preparing a full report on the Agency's FY 1985 Child Survival Action Program, which we will be submitting to Congress next month.

I wouild like to take this opportunity to give you some of the highlights of our FY 1985 program, and to indicate future directions for A.I.D.'s child survival activities.

ORAL REHYDRATION THERAPY

First, I would like to discuss Oral Rehydration Therapy, which, along with other efforts at diarrheal disease control, is a principal element of A.I.D.'s child survival program. Afterwards, I will discuss A.I.D.'s expanding immunization efforts.

It is well known that diarrhea with associated dehydration is the world's greatest killer of children. To draw attention to this problem, the United States joined with other donors and cooperating nations over two years ago to sponsor an International Conference on Oral Rehydration Therapy (ICORT). At that conference, Mr. McPherson, the A.I.D Administrator, personally challenged the participants to work aggressively to expand the use of this inexpensive means of reducing child mortality.

A.I.D.'s own financial support for ORT programs has increased markedly since that conference. Last year, for example, our expenditures on ORT exceeded $37 million—almost double the previous year. This expanding program made it possible for the Agency to assist 50 countries and we will be reporting on some of these programs in our "Child Survival Report to Congress" next month.

ORT IN EGYPT

The National Control of Diarrheal Disease Project in Egypt is one of the most comprehensive of those supported by A.I.D. I wish to highlight it, not only to demonstrate what can be achieved in a relatively short period but also to make it clear that we use ESF as well as development assistance resources to further the Agency's child survival goals.

This project grew out of a pilot study begun in 1977 which showed a 40 percent reduction in deaths from diarrhea in several districts where ORT has been introduced and promoted. With lessons learned from the pilot study, a five-year campaign was mounted, beginning in 1983, to spread knowledge and use of ORT over the entire country. The goal of this campaign was to reduce mortality in children under three by 25 percent. By the end of 1985, close to 90 percent of all health facilities around the country will be able to provide on-site rehydration services. Pharmacists have been supplied with Egyptian-made rehydration packets and plastic measuring cups to sell for home use. In remote areas, women who have been trained to deliver oral rehydration therapy have been supplied with materials for distribution. They become income earners and at the same time contribute to the welfare of their own communities. The project logo, chosen by mothers in focus groups, has become the most commonly recognized graphic advertisement in Egypt.

The early results encouraging. The number of mothers who knew about, ORT rose to 94 percent in 1984, and over half of them had used rehydration salts to treat dehydration. But even more important, sample surveys show that diarrhea-caused deaths in children under two have been cut by two-thirds since 1980, and infant mortality (0–1 years) by nearly half.

ICORT II

Next week you will be receiving from Mr. McPherson an invitation to participate in a second world-wide conference on oral rehydration therapy. In this conference we will be reviewing the record of a large number of national ORT programs, such as Eqypt's as well as exploring new ways of improving the implementation of ORT programs. We hope to see many of you at those meetings.

IMMUNIZATIONS

The second major element of A.I.D.'s child survival program this year has been immunizations. This year, A.I.D.'s expenditures on immunization programs alone exceeded $21 million. And we expect to increase our support for immunization programs significantly in the years ahead as our cooperation with national immunization programs expands.

Each year an estimated 3.5 million children in the developing world die of six immunizable diseases—measles, whooping cough, tetanus of the newborn, diphtheria, polio, and tuberculosis. Beyond that, almost 500,000 annually are crippled by polio, and hundreds of thousands more are disabled by the blinding, crippling, and debilitating complications of measles and tuberculosis.

The goal of A.I.D.'s Child Survival Action Program—and, indeed, of the entire international effort to expand access to immunizations worldwide—is to set in motion a strategy that will assure the development of indigenous, self-sustaining programs to eliminate these diseases wherever possible.

In 1984 it was estimated that less than 20 percent of the children in the developing world were protected against all or most of these vaccine-preventable diseases. In fact, it has been estimated that immunization programs actually contacted nearly 40 percent of children, but almost half of those reached were not fully protected because of the high drop-out rate common in most of the poorer developing countries.

Because immunization is so important and cost-effective an intervention, we have placed particular emphasis on helping countries expand their immunization programs. We realize that this will require sharply-enhanced U.S. financial commitments to immunizations—commitments which we are willing to make.

Our goal with immunization, as with ORT, is not simply to deploy the technologies to vaccinate children in the next 5 years. Our goal is to help institutionalize these programs, so that they will continue to be available to children of future generations.

We recognize that U.S. encouragement and financial support for immunization programs cannot, by themselves, ensure the long-term success of these efforts. For that reason, we seek to assure that vaccines will be available, delivery systems in place and functioning, and the population knowledgeable about the value of immunizations, regardless of whether there is an international initiative promoting immunizations or, for that matter, substantial external resources.

CCCD PROJECT IN AFRICA

A.I.D. is now supporting immunization programs in approximately 51 countries. The $45 million Combatting Childhood Communicable Diseases (CCCD) Project, for example, is currently operating in 12 African countries, and we expect to expand the program to 16 African countries this year. Because we recognize that hard-pressed African governments can ill afford to hire new people and make new capital investments, the CCCD Project operates on the premise that much better use can be made of existing facilities and resources.

Hence, CCCD is concentrating on retraining existing health workers and epidemiologists, on improving the supply chain to existing health facilities, on promoting health education, and on strengthening the management capabilities of national ministries of health. Technical backstopping for the project is the responsibility of the Centers for Disease Control, which also spearheaded A.I.D.'s contributions to the World Health Organization's successful drive to eradicate smallpox.

I mention the CCCD project because it highlights our concern for establishing the infrastructure—including the trained personnel and the communications systems—needed to deliver basic immunizations against childhood diseases. At the Bellagio II conference last month, the U.S. made it clear that immunization should not be seen as an end in itself, but a beginning—the beginning of sustainable health care systems available even to the poor and the isolated rural families in developing countries.

IMMUNIZATION IN ECUADOR

Another project which is an example of the kind of immunization activity A.I.D. supports is our bilateral project in Ecuador. The project is designed to reduce infant mortality by dramatically increasing immunization coverage and expanded use of oral rehydration therapy throughout the country. On October 26, the project was launched with a three-day intensive national mobilization campaign to immunize children under 5 years of age. Initial results suggest that the number of children vaccinated may be at least four times that of previous efforts.

This project is exemplary in a number of respects. First, it reflects A.I.D.'s efforts to coordinate immunization programs among a variety of sponsors. This particular project brings together such diverse institutions as the local Ministries of Health and Education, the Church, the Armed Forces, UNICEF and private organizations in a common humanitarian endeavor. It has received the personal attention of the President and First Lady of Ecuador.

Second, the project emphasizes the technologies which are most cost-effective in savings children's lives. While the first phase of the project focuses most intensively on immunizations, mothers who bring their children in for vaccinations are given oral rehydration packets, a bag in which to mix the solution, and fact-to-face education in diarrheal disease management. ORT education will be intensified between December and April, the season during which diarrheal disease is most extensive. In subsequent phases, the program will integrate promotion of breastfeeding and nutrition monitoring into its ongoing program.

Third, the project employs the mass media to encourage participation in the national immunization days and to promote safe health practices. Television, radio and newspapers carry messages about immunizations, oral rehydration and appropriate infant feeding, all with the theme of ensuring strong and healthy Ecuadorean babies.

A.I.D. is providing $4 million over a three-year perod for this national child survival program in Ecuador. Thirty Peace Corps volunteers working in remote areas are also helping by encouraging mothers to have their children immunized as well as by helping with the actual immunizations at the established health posts.

EVOLVING AN IMMUNIZATION STRATEGY FOR A.I.D.

A.I.D. is fully involved and committed to a strategy to expand access to immunizations. As we undertake this effort, we must deal with a number of technical and strategic issues. For example, we are concerned that the call for universal immunization by 1990 may encourage unrealistic expectations, especially in those countries with very low coverage rates, a lack of basic infrastructure, and deteriorating economic conditions.

More importantly, while it is theoretically possible, with an all-out push through special "immunization days" and a variety of high visability special efforts to boost coverage rates significantly by 1990, we have to be concerned with what happens in 1991 or 1992. Our goal must be to develop the sustained capacity to immunize children.

We are giving careful consideration to a number of strategic options through which we will target our immunization efforts in the years ahead.

We are, for instance, considering the advantages of targeting immunization efforts on children under one year of age. This is the age group for which the immunization will offer the greatest protection against childhood diseases. At later ages, many of the chidren may already have contracted these illnesses.

We may, as well, give greater emphasis in our immunization efforts to those vaccines where coverage rates lag behind—e.g., measles and neonatal tetanus, although our goal will contine to be to build the capacity to deliver all the available vaccines against the six childhood diseases.

We will also continue our support for the development and/or improvement of vaccines which will make a significant difference in health care delivery in the years ahead. In FY 1985, A.I.D. committed approximately $22 million to vaccine improvements, including:

A measles vaccine that can be given to infants as young as six months, when it could be administered simultaneously with the third DPT shot. The present measles vaccine will not "take" until nine months, by which time the child may already have been infected.

A vaccine for whooping cough that eliminates the negative side effects that now discourage mothers from completing the DPT series.

A genetically engineered oral vaccine for *typhoid*, which has become resistant to antibiotics in several parts of the developing world. Typhoid is responsible for a considerable number of deaths worldwide, with its greatest severity in adolescents.

An oral vaccine for cholera, the most severe of the diarrheal diseases, which affects an estimated 20–24 million adults and children worldwide.

A vaccine for rotavirus, the most common cause of diarrhea in the US as well as in the Third World; and

Perhaps most promising of all, the development of prototype vaccines against malaria, which kills over 1 million children in Africa alone each year.

Our research efforts are integral elements of our overall strategy to promote broader access to immunization. In addition to new and improve vaccines, our research is focusing on improved means of diagnosing disease as well as improvements in immunization delivery.

On the technical side, for instance, A.I.D. is supporting a number of improvements that could make vaccines easier to deliver to outlying communities. We are giving particular attention to improving the heat stability of vaccines and other health commodities, in order to reduce dependence on a cold chain. One of the most exciting discoveries in this field is Ezeject, a one-dose injectable developed and donated by Merck, Sharp, and Dohm—a U.S. drug company.

Vaccines packed in the Ezeject remain potent for three weeks without refrigeration, thus eliminating the last and most expensive step in the cold chain. Furthermore, when mass-produced, the Ezeject should cost only 3–4 cents, one-third the price of a disposable syringe. The first 3,000 of these devices are presently being tested by nurses and community health workers in Guatemala's measles vaccination program; we are very optimistic about this simple lnew technology.

As for other aspects of our evolving immunization strategy, we will be focusing on selected countries where the host government and other donors alike are prepared to join us in making the long-term commitment necessary to build the institutional capacity to deliver immunizations and other life-protecting interventions.

Finally, we will be directing our technical advice and assistance to areas where we believe it will be most effective—among them training, surveillance and information systems, communications and marketing, research, planning, and financial analysis.

In conclusion, I would like to emphasize that we are firm in our commitment to expand access to immunizations in A.I.D.-assisted countries. We expect to see vastly improved access to immunizations in the developing world in the years ahead, and we intend to coninue to work toward that goal.

As President Reagan stated in a letter to the Secretary General Perez de Cuellar last month:

"Ensuring that children are protected from the scourge of disease is an important part of our commitment to the future. . . . The children who are now being born will inherit the world that we have created. This century has seen the development of the technologies which can offer protection from the diseases of childhood. The United States is pledged to do our part . . . so that the promise of protection offered by these technologies is part of our legacy for the future."

Prepared Statement of Stephen C. Joseph, M.D., M.P.H., Special Coordinator, Child Health and Survival, United Nations Children's Fund, New York, NY

Mr. Chairman, thank you for the opportunity to appear before you today to present a statement concerning UNICEF's involvement in "UCI 1990" (Universal Childhood Immunization)—the effort to bring the benefits of immunization against the major communicable diseases of childhood to all the world's children by the start of the next decade.

My name is Stephen Joseph; I am a pediatrician currently serving as UNICEF's Special Coordinator for Child Health and Survival.

Alongside our partners in the World Health Organization, UNICEF has been involved for the past decade in the Expanded Program of Immunization (EPI), a program that set the 1990 objective of universal child immunization against diphtheria, pertussis (whooping cough), tetanus, polio, measles, and tuberculosis.

The work of ten years of EPI has yielded significant results. A few years ago the annual death toll among small children from the EPI diseases was well over 5 million; today it is between 3.5 and 4 million. Table 1 shows the latest estimates of deaths from tetanus, measles, and pertussis in the developing world. An equivalent number of young children are disabled annually: blind or deaf or mentally retarded from measles, paralyzed from polio, chronically ill with tuberculosis. The vaccine-preventable diseases are especially devastating in areas where acute malnutrition is prevalent, e.g., in those areas of Africa for which this Committee has shown such concern. In most Africa and Asia, the vaccine-preventable diseases are responsible for as much as one-third of all infant and child deaths.

Until about two years ago, the EPI concentrated mainly on developing the infrastructure of national immunization services: training the managers and field staff, developing the logistics and "cold chain" to provide active vaccine at immunization sites, providing the necessary equipment and supplies. Progress was steady but incremental, and the going remained especially tough in the least-developed countries of Africa. If 60 percent of all children now receive at least one immunization, only a third complete their primary series of protection with DPT or polio, and the protection rates for measles and for tetanus immunization via the mother are even less, as shown in Table 2. As impressive as that 60 percent first-contact figure is, it became apparent that the 1990 objective was out of reach UNLESS some means of rapidly accelerating the program could be devised.

Within the past two years that is exactly what has happened, and UNICEF is proud to be closely associated with an acceleration of EPI programs in country after country around the world that now makes the UCI goal of 1990 seem quite reachable. Attachment A is a tentative list of countries that are participating in this acceleration, and additional countries will surely join this rapidly-expanding list. Optimism is such that in June of this year, the Secretary General of the United Nations sent a letter to all Heads of State asking their commitment to the UCI 1990 effort (Attachment B), and in October over half the visiting Heads of State made explicit references to UCI in their addresses to the 40th General Assembly.

What has produced this ability to accelerate EPI programs around the globe? In brief, it is due to an extraordinary increase in our abilities to employ techniques of social mobilization and apply them to immunization programs. These have involved the use of mass media and community action, ranging from the engagement of national-level political commitment and leverage, to the involvement of multiple sectors within government bureaucracies, to the enlisting of diverse groups in the private sector and general community, to the creation of effective demand for immunization on the part of mothers and families themselves. This has reached the stage, or is at least rapidly reaching the stage, where the drive for Universal Child Immunization by 1990 is taking on the characteristics of a world movement—a global mobilization of awareness and effort. This mobilization phenomenon—utilizing a vast array of available methods of communications, from state-of-the-art to village technology, is providing the EPI acceleration with something that public health professionals have often reached for, but seldom achieved: the ability to transform health programs into social movements.

In 1985, this increased momentum has led to several tens of millions more children fully immunized than was the case in 1982 or 1983. In the past year or two, more than a score of countries have massively accelerated their EPI efforts, most of them with resultant large increases in the proportion of children fully immunized. Twenty or perhaps forty, additional countries will undertake major EPI accelerations in the next 12 to 18 months, among them the "giant" countries of China, India, Indonesia, and Bangladesh.

Significant progress in accelerated EPI programs has been made in such countries as Brazil, Colombia, Nigeria, Burkina Faso, and El Salvador. Many additional countries, are mobilizing for significant accelerations, or are already making major strides forward. Three examples of the latter category in Latin America are the Dominican Republic, Peru and Bolivia. Turkey is currently in the midst of a campaign effort that has reached, by preliminary estimate, 85 percent of its children on the first round. Country after country is scaling up.

A most important feature of this global mobilization is the diversity of specific approaches, within an overall context of political and social mobilization. Colombia, Brazil and the Dominican Republic have emphasized "national immunization days" as a means to launch accelerated efforts; Turkey and Burkina Faso have adopted campaign approaches that see each pulse of effort extending over a week or a month. Nigeria's outstanding achievements are based on a centrifugal radiation of district EPI efforts involving multiple sectors. Many countries over the next year will be adopting combination approaches, with high visibility initial campaigns tied solidly to expansion of health/EPI infrastructures.

Another feature of diversity in the great acceleration of the past year or so, especially with regard to campaign-style approaches, involves single, multiple, or all-EPI antigen programs. The trade-offs here are complex. Clearly a single-antigen campaign is not cost-effective compared to multiple antigens; clearly a single-antigen approach can lead to diversion of attention (and resources) from other important antigens. We all know the very dangerous consequences of failure of a single-antigen measles campaign. But, on the other hand, a dramatic single-antigen polio campaign can mobilize political and mass public support, and Brazil and other countries have shown how this can be a springboard to succeeding multiple-antigen campaigns. The Pan American Health Organization (PAHO) has chosen the goal of polio elimination as just such a springboard for EPI in the Hemisphere, while constantly stressing the need not to separate polio from the rest of the program.

One of the most important concerns underlying both the issue of "campaign versus infrastructure approach" and the issue of single versus multiple antigen campaigns is the concern over "sustainability"—long-term growth and follow-up of immunization efforts, and, derivative to that, of using EPI to foster broader primary health care activities. Here I think it can be argued that the experience of the past two years is an encouraging one. A number of countries, Brazil and the Dominican Republic being only two examples, have used single antigen (polio) campaigns as springboards to multiple-antigen campaigns. A number of countries, El Salvador and Burkina Faso and Turkey being only three examples, have used the initial campaign as a catalyst for realistic planning and action for expanded EPI infrastructure. Other countries, Colombia being one outstanding example, have used an EPI campaign as a first-step toward the articulation and implementation of a broader acceleration of primary health care.

In the past year we have learned much, and continue to learn at an accelerating rate, about the production, distribution and cost parameters of vaccines and supplies for this global acceleration. Tables 3 (Doses of Vaccines Supplied and Forecast to 1990), and 4 (Cost Summaries of Vaccines Supplied and Forecast to 1990) give an indication that UNICEF is beginning—indeed is forced to—program our procurement and distribution logistics on a rapidly-changing global matrix. Our ability to do this is improving rapidly.

What are some of the specific lessons we are learning? We are confident that world vaccine production capacity can meet the acceleration demands—if properly programmed with four to six months' lead-time regarding any individual country's program requirements. We are increasingly sure of our estimates that external donor costs to reach the 1990 objective are in the range of $100 to 150 million annually over the next 5 years, additional to what is now available—a modest and achievable requirement in relative terms.

But there are also some difficult lessons being learned. One is that the production and distribution capacity of supplies and equipment other than vaccines could well produce serious bottlenecks in the next two years—particularly with regard to cold chain equipment in the face of accelerated programs in the "giant" countries. We are also learning that we badly need (all of us—multilaterals, bilaterals, countries, and private organizations) to take a more thorough and scholarly look at the recurrent cost issues—short and long-term—for EPI and associated primary health care.

Neither donor nor recipient groups have as yet squarely faced the recurrent cost issues.

In the area of mobilization of donor resources, the past year has been a very positive one. Many bilateral and private agencies have generously increased their contributions to EPI efforts, both through their own programs and through contributions to UNICEF, WHO, UNDP, and World Bank activities, and the multilaterals themselves have increased their levels of effort. In addition to the United States Child Survival Fund, with which this Committee is very familiar, the Italian government is providing $100 million to UNICEF for EPI and related Child Survival actions in 29 countries. In October, the Canadian government announced the availability of $25 million for EPI activities in Commonwealth countries. Most notable in the non-governmental sector is the Rotary Foundation's commitment to provide $120 million in their "Polio Plus" program. With proposals for mobilizing increased contributions from the private as well as public sectors, I think we can be confident that our financial objectives are feasible—though it will require vigorous and prolonged effort.

All such evidence as we have so far, points to some strong trends:

Immunication coverage can be rapidly increased by accelerated programs;

Morbidity and mortality from vaccine-preventable deaths are nearing a sharp break downward on the curve in many countries (polio is by far the most advanced by disease, and Latin America by region);

Costs of national EPI programs are of the order of magnitude that can be borne by most countries, assistance will have to be continued well beyond 1990 to keep programs in place.

World vaccine production and logistics are adequate to the task. The greatest demands will come in 1986 and 1987, as many countries "catch up" with their unvaccinated under 5 year olds.

Country management and training remain high-priority long-term problems, but are amenable to accelerated effort and innovative approaches;

Political and social mobilization can move EPI up to the top of the national health and social development agenda—at least for the short-term.

Beyond these, our ability to take firm positions of lessons learned on the issues becomes rapidly more anecdotal and speculative. For how long (and through how many changes of national leadership) can high-level political support be maintained? To what extent can this mobilization always be translated into vigorous and determined program action? How can multiple sectors be brought fully "in", without the health sector (which will, after all, carry the long-term program) feeling "invaded" or "left out"? How can we assure that campaign efforts will strengthen, rather than undermine, long-term EPI infrastructure development? How can EPI itself nourish, and not starve by categorical diversion, broader Primary Health Care development? Above all, will these accelerated efforts sustain?

It is far too early for anyone to answer these questions definitively, let alone with hard data. Our responses at this point must be necessarily anecdotal and impressionistic, although we can expect a flood of data over the next two years.

Nevertheless, the anecdotal and impressionistic data seem to justify some additional statements about lessons currently being learned:

1. Evidence to date in perhaps twenty countries suggests that political and social mobilization *can* be turned into effective accelerated program outcome.

2. Campaign strategies seem to develop a "positive programming momentum," leading countries to invest significant resources in their own longer-term EPI development. A successful immunization campaign seems to engender both desire and confidence, and to translate into both more aggressive performance by health ministries and persistent consumer demand by communities.

3. Immunization Campaign "versus" EPI infrastructure development arguments are becoming less relevant. We should, and can, keep our eye upon the apple of combined approaches; we should insist on having the best of both possible worlds. We should recognize that there are many roads to Rome, and that these "global" issues are always only worked out in country program solutions.

Attachment C.—(WHO/UNICEF Joint Guidelines for Planning Accelerated EPI Programs) is a first attempt by the two agencies to balance these two program elements; this effort will undoubtedly grow and change shape over time (and in differing country contextal), but we have made a start.

I am less sanguine about the issue of single-antigen campaigns, especially where they may be most tempting—i.e., in those countries where the epidemiologic, political, or geographic contexts are least favorable to successful and sustained programs. I believe we must be very cautious here, lest we dissipate resources and effort, and lose credibility for the overall endeavor. Perhaps the single-antigen campaign has its place in the more favorable country context—where extension to multiple-antigens and sustained programming can occur relatively quickly and with high probability of success of both efforts; in those circumstances the political appeal of single-antigen campaigns may be capitalized upon.

I shall end, then, Mr. Chairman, by offering a definition of accelerated EPI programming. We are clearly on our way, rolling with the tide, and the events of the past year or so ought to help us fill in the map of where we are headed, and how we want to get there.

An accelerated EPI Country Program:

1. Has as its objective the availability of immunization against the EPI Diseases for all children in the nation by 1990,

2. Builds upon the foundation of the EPI infrastructure that exists,

3. Recognizes that political and social mobilization are in virtually all cases necessary pre-conditions to creating the energy and resources required to reach the 1990 objective.

4. Enlists all available communications and advocacy methods of stimulating consumer demand for immunization,

5. Employs whatever strategies for delivering services are applicable to the specific national context, while attempting to maximize the respective advantages, and minimize the respective disadvantages, of campaign and infrastructure-development approaches,

6. Views campaigns as only a first acceleration of effort, never as a substitute for sustainable long-term-immunization programs, and

7. Views a long-term immunization program as itself only a way-station on the road to primary health care.

Mr. Chairman, UNICEF appreciates the attention that this Committee and the United States Congress is giving to the children of the developing world, in Africa and elsewhere. A great opportunity lies before us, to protect those children against killer diseases which, though only a pale shadow in Western countries, wtill devastate malnourished and frequently-infected child populations. This protection can be delivered cheaply and effectively. We have set outselves 5 short years to reach our goal. With your help, and the help of others, it can be done.

Thank you, Mr. Chairman.

TABLE 1.—DEVELOPING COUNTRY DEATHS FROM SELECTED VACCINE-PREVENTABLE DISEASES,[1] 1983

[In thousands]

Pertussis	Estimated number of annual deaths		
	Neonatal	Tetanus	Measles
Country:[2]			
India	288	745	171
Pakistan	126	155	53
Bangladesh	113	165	55
Indonesia	68	208	61
Nigeria	61	163	54
All other	258	652	214
Total	914	2,088	608

[1] Excluding China.
[2] The same 5 countries account for 65 to 72 percent of these deaths.

Source: World Health Organization.

TABLE 2.—IMMUNIZATION COVERAGE AROUND 1983

	Percent 1-year olds				Percent pregnant women
	BCG	DPT 3	Polio 3	Measles	Tetanus 2
Developing countries[1]	39	38	33	25	20
Africa	39	32	32	33	19
Latin America	59	49	73	65	13

TABLE 2.—IMMUNIZATION COVERAGE AROUND 1983—Continued

	Percent 1-year olds				Percent pregnant women
	BCG	DPT 3	Polio 3	Measles	Tetanus 2
South and East Asia[2]	34	37	23	9	24
West Asia[3]	49	43	47	46	5
Developed countries	83	84	93	85	

[1] Excluding China.

[2] South and East Asia equals Asia other than West of Iran.

[3] West Asia equals Asia West of Iran.

N.B. In some countries DPT and Polio are given for 2 doses only and measles is given after 12 months.

Source: UNICEF and WHO data.

TABLE 3.—EPI VACCINES SUPPLIED BY UNICEF DURING 1982/84 AND ESTIMATED SUPPLY VOLUMES FOR 1985 THROUGH 1990

[Unit: Millions of doses]

Year	DPT	TT	DT	Measles	Polio	BCG	Total
1982	30.0	22.0	4.0	9.0	24.0	35.7	124.8
1983	43.0	23.1	7.7	11.4	26.4	35.7	147.3
1984	63.9	30.5	27.3	27.7	80.5	46.7	276.6
1985	111.0	38.0	18.5	49.0	137.0	60.0	413.5
1986	138.0	47.0	23.0	61.0	171.0	75.0	515.0
1987	175.0	58.0	27.0	80.0	214.0	94.0	648.0
1988	220.0	72.0	35.0	100.0	270.0	118.0	815.0
1989	280.0	90.0	40.0	125.0	340.0	150.0	1,025.0
1990	340.0	115.0	50.0	160.0	440.0	183.0	1,288.0

N.B. The above projections for 1986 through 1990 are best estimates and subject to considerable changes in future.

Source: UNICEF.

TABLE 4.—COST SUMMARY OF VACCINES SUPPLIED AND FORECAST TO 1990 [1]

[U.S. dollars in thousands]

	DPT	TT	DT	Measles	Polio	BCG	Total
1982 actual	720	308	90	774	648	2,287	4,827
1983 actual	817	289	134	855	514	1,965	4,576
1984 actual	1,022	321	340	1,666	1,410	1,820	6,581
1985 forecasted	1,776	399	261	3,381	2,946	4,440	13,203
1986 forecasted	2,429	545	347	4,623	4,053	6,105	18,102
1987 forecasted	3,395	737	448	6,680	5,564	8,413	25,237
1988 forecasted	4,686	1,008	641	9,188	7,722	11,623	34,868
1989 forecasted	6,552	1,386	804	12,625	10,710	16,245	48,322
1990 forecasted	8,772	1,944	1,105	17,776	15,224	21,814	66,635

[1] We are projecting a 10-percent yearly increase in cost of vaccine due to both expected capacity problems and exchange rate changes.

ATTACHMENT A.—COUNTRIES UNDERTAKING ACCELERATION OF EPI PROGRAMS [1]

Prior and/or current		Planned	
1984 and prior	1985	1986	1987 +
		AMERICANS	
Colombia	El Salvador	Mexico	
Brazil	Equador	Guatamala	
Dominican Republic	Peru		
Bolivia	Haiti		
Nicaragua	Paraguay		
	Honduras		
		ASIA	
Sri Lanka	China	Bhutan	
Maldives	India	Bangladesh	
Thailand	Nepal	Indonesia	
Pakistan		Burma	
		MIDDLE EAST	
	Turkey	Jordan	Yemen Arab Republic
	Iraq	Syria	Democratic Yemen
	Sudan	Oman	
		Egypt	
		AFRICA	
Nigeria	Senegal	Mauritania	
Burkina-Faso	Somalia	Djibouti	
	Zaire	Gambia	
	Ethiopia	Kenya	
	Uganda	Guinea Bissau	
	Ghana	Equatorial Guinea	
		Guinea	
		Togo	
		Benin	
		Sierra Leone	
		Central African Republic	
		Rwanda	
		Burundi	
		Malawi	
		Angola	
		Mozambique	
		Botswana	
		Congo-Brazzaville	
		Madagascar	
		Tanzania	

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[1] Best-estimate list from UNICEF sources as of October 1985. List most probably contains omissions. Some programs are sub-national in extent. Country programs do not necessarily meet the definitions proposed in this paper. Additional countries will no doubt be added in 1986 and beyond.

ATTACHMENT B

June 10, 1985.

THE SECRETARY-GENERAL,

EXCELLENCY, As we observe the 40th Anniversary of the founding of the United Nations, I should like to commend to your personal attention the contents of the enclosed resolution that was adopted unanimously by the UNICEF Executive Board at its recently concluded session.

The resolution articulates the possibility of achieving the goal of universal immunization of young children by 1990, through accelerated action in line with a goal already established by the World Health Assembly. The endeavor could result in saving the lives of several million children each year and in preventing a comparable number from suffering permanent disabilities.

Experience in several countries, some of which have doubled or even trebled their immunization rates in the recent past, has already shown that mobilizing a society's organizational and communications resources in support of an effective national immunization programme can have the most far-reaching cumulative effect. In particular, it can lend momentum to other primary health care approaches as supported by WHO and UNICEF. While much work remains to be done before the goals of the resolution are finally achieved, I am convinced that their reaffirmation in 1985 could have a significantly positive effect and I attach a brief background paper that elaborates this point.

With these considerations in mind I should like to express my hope, Excellency, that under your personal guidance your Government will reaffirm its commitment to these objectives in its statements during the 40th session of the General Assembly which will be held later this year. I am convinced that your leadership, in concert with that of other heads of government, would advance these most important efforts for the well-being of our children and the future of the world.

Please accept, Excellency, the assurances of my highest consideration.

JAVIER PÉREZ DE CUÉLLAR.

ATTACHMENT B

RESOLUTION BY THE EXECUTIVE BOARD OF UNICEF ON OBSERVANCE OF THE 40TH ANNIVERSARY OF THE UNITED NATIONS

BANGLADESH.—DRAFT RESOLUTION

The Executive Board of the United Nations Children's Fund,

Reaffirming its commitment to the principles and objectives of the Charter of the United Nations;

Taking note of resolution 39/161(A) of the General Assembly on the observance of the 40th Anniversary of the United Nations;

1. *Urges* that special attention should be paid to the well-being and interests of the children, future citizens of the world, in connection with the observance of the 40th Anniversary and that all countries should continue to attach high priority to the needs and development of children as integral elements of national plans and policies;
2. *Draws* the attention of world leaders to the importance of reaffirming on this occasion their increased commitment to accelerating the implementation of the child survival and development revolution and achieving universal immunization by 1990 with the objective of reducing dramatically the number of deaths among children from preventable causes;
3. *Requests* that the Declaration to be adopted by consensus on 24 October 1985 at the end of the commemorative session may also include reference to these important goals and objectives for the welfare of children;
4. *Also requests* the Executive Director to bring the contents of this resolution to the attention of all concerned.

PREPARED STATEMENT OF WILLIAM H. FOEGE, M.D., EXECUTIVE DIRECTOR, TASK FORCE FOR CHILD SURVIVAL

Mr. Chairman and Members of the Committee: I am William H. Foege, Executive Director of the Task Force on Child Survival. In addition to my position on the Task Force, I am also a member of the International Health Program Office staff at the Centers for Disease Control (CDC). As you requested, I am also including a summary of CDC's activities in support of child immunization activities abroad.

I. INTRODUCTION

In March 1984, thirty-four (34) world leaders participated in a conference sponsored by The Rockefeller Foundation in Bellagio, Italy, to consider the subject of better protecting the health of the world's children. At that meeting, the formation of the Ad Hoc Task Force for Child Survival was proposed and endorsed, with the specific objectives of improving immunization levels of children in the developing world.

The Task Force consists of representatives designated by the sponsoring agencies: The World Health Organization (WHO); United Nations International Children's Emergency Fund (UNICEF); The World Bank; The United Nations Development Program (UNDP), and The Rockefeller Foundation. The Task Force has a small staff, located in Atlanta, Georgia, consisting of an Executive Director, a Project Manager, an Office Manager, and two secretaries. We have recently hired a consultant whose primary responsibility is to work with UNICEF to assist with the Italian Initiative. We have also employed an epidemiologist from India as a Special Consultant to The Task Force.

The Task Force staff reports to The Task Force representatives, and meets with them quarterly to review agency activities, coordinate future strategies, and select areas of special priority.

A look at The Task Force activities cannot be separated from some of the overall trends in the gobal program. I will briefly review the problem and certain major trends, and then summarize Task Force activities and how they have changed.

Now is a particularly propitious time to review the status of the world immunization effort because we have just concluded a meeting on this subject in Cartagena, Colombia, on October 14-16. This meeting was a follow-up to the conference held in March 1984 at The Rockefeller Center in Bellagio, Italy.

The conference in Cartagena focused on current progress in accelerating and expanding childhood immunization programs, plans for meeting the WHO 1990 objectives for universal childhood immunization, and strategies for using programs to build better primary health-care systems.

The conference was attended by ministers of health and senior representatives from ten developing countries; heads and technical experts from WHO, UNICEF, UNDP, The World Bank, and The Rockefeller Foundation; senior representatives of several bilateral government agencies; and non-governmental organizations (NGOs) and representatives of The Task Force for Child Survival.

II. INTERNATIONAL EXPERIENCE

A. *The Problem.*—The size of the gobal problem is hard to overstate. Some diseases, such as measles, are so ubiquitous that all children born in the world can expect to have measles if they do not die of some other cause first, or if they have not been immunized. But, in addition, a disease such as measles is more severe and causes greater mortality in children suffering from other problems, including malnutrition. For example, in West Africa, death rates from measles as high as 5-10 percent have been recorded on many occasions, and during times of famine, mortality rates exceeding 25 percent have been observed. It is estimated that 3½ to 4 million deaths still occur each year due to these easily preventable immunizable diseases.

But death is not the only cost of these diseases. It is estimated that an additional 4 million children are crippled each year, many from polio. Others suffer mental retardation or blindness due to measles. The burden imposed on society by long-term crippling and by the diseases themselves provide an unnecessary barrier to life quality. Health, disease and population have complex interactions. However, it is clear that the traditional disease burden in Third World countries heavily involves infectious diseases, malnutrition and population pressures. While malnutrition makes many infectious diseases worse, it is also clear that repeated infectious diseases, including measles and diarrheal diseases, in turn, contribute to malnutrition, both by requiring excess calories for a diseased child, and also because of the loss of calories through diarrhea and the restricted intake of calories because of illness. By the same token, population pressures often facilitate disease transmission or impair sanitation, making infectious diseases worse.

The paradox is that increasing childhood mortality does not lead to reductions in populations pressures; indeed, the converse appears to be true. The highest net increases in population are now seen in the countries with the highest infant and child mortality rates. (Figures I)

Death control appears to be an important ingredient in birth control and must be pursued vigorously. Ideally, maximum assistance should be given to countries to reduce unnecessary deaths, to reduce unnecessary illness, and to provide knowledge about and supplies for family planning. If children are saved from a measles death will they simply die of something else? That is an argument advocated by some who doubt the wisdom of immunization programs. The answers are far from complete, but it is clear that:

1. Much crippling can be reduced;
2. Not all spared from vaccine preventable diseases will succumb to other childhood diseases;
3. Children dying of measles never have the luxury of testing their survivability from other conditions; and
4. The remarkable increase in life expectancy this century in the United States (over 25 additional years at birth) is the result of one advance after another cumu-

lating to an additional quarter century of life. The infants spared did not necessarily die in childhood of other diseases.

B. *New Interests in Immunizations.*—In the past 18 months, the world has seen an unparalleled development of interest in immunizations. More countries are now developing national immunization programs, and international agencies are increasing their investment in these activities. Groups such as Rotary International have entered the immunization arena, and basic scientists have been challenged with a new array of tools to provide a facelift to current vaccines and to develop new vaccines unexpected a decade ago.

C. *Global Coordination.*—A most significant trend of the global immunization program in the past 18 months has been an improvement in the degree of coordination which is now being achieved globally. This defies conventional expectations of a program which is growing in interest, with increasing numbers of donors and participants and an increase in resources. Despite what would ordinarily be fragmenting influences, there has been unification of the global effort, including increasing efforts by WHO and UNICEF to standardize vaccine procurement, program planning and execution. Indeed, these two organizations have now combined their efforts to produce a single publication, "Planning Principles for Accelerated Immunization Activities."

D. *Resources.*—With this new interest have come new resources unpredicted at the "Bellagio I" immunization meeting in March 1984. Some of the most important resources are political. When President Betancur of Colombia immunized a child on television in order to inaugurate the special immunization days the political resource which accrued was incalculable. Around the world, political leaders are taking a new interest in providing immunization programs for their citizens. This month, India will launch a national program on the birthday of Indira Gandhi. The program has been designated a living memorial to her. The social norm is responsive to political leaders who invest their interest in immunization activities, and they are now engaging in promoting immunization in a way not seen since the early days of polio vaccine 30 years ago, or smallpox eradication 10 to 15 years ago.

Many of the resources are material. At "Bellagio I" it was estimated that universal immunization would cost at least $1 billion per year, requiring $300 million in external support within a few years. Eighteen months ago, it was not clear that such reduce levels were possible. The commitment of Rotary International to provide $120 million worth of vaccine over the next two decades has been a catalyst that provides ripples far beyond that one commitment.

The extraordinary contribution of the Government of Italy of $100 million to UNICEF for immunization programs, as well as the increased resources now being provided by USAID not only to develop immunization tools, but also to deliver immunization programs, reflect a spectrum of new activities by the bilateral agencies. The proposed grant by the Inter-American Development Bank to the Pan American Health Organization (PAHO) for polio eradication, and the interest by private industry which was obvious at a Salk Institute meeting in March 1985, are indications that the resource requirements outlined at "Bellagio I" for global immunization are fast becoming possible. Canada has announced a contribution of $25 million for immunization in commonwealth countries. While resources constituted the number one obstacle to global immunization 18 months ago, that is no longer the case. This major change reflects the fact that the world is no longer willing to accept that children should suffer from polio or die from measles or tetanus. The major barriers to immunization now are the development of country programs to take advantage of the available resources and the mobilization of managerial skills to effectively deliver immunizations.

E. *Strategies and Tactics.*—The increase in resources, the increase in interest, and the enthusiasm to progress rapidly have improved the climate for innovation and experimentation with new strategies and tactics. The decision of the Pan American Health Organization (PAHO) to eradicate polio from this hemisphere by 1990 is an example of this innovation. PAHO has selected a clear, precise and achievable to objective, but they have also made it clear that polio immunization will always be linked to other WHO Expanded Programme on Immunization (EPI) efforts whether in an ongoing maintenance program or in special immunization days. By tying polio to the remainder of the immunization program and by choosing a goal of polio eradication, PAHO has developed a very potent strategy of having polio eradication, well understood and accepted, be the moving force for improvement in the entire EPI program. Another example is seen in the creative use of immunization days, not as a substitute for an ongoing immunization program, but as a way of providing concentrated health education, soldifying political support, capitalizing on volunteer effort, and unifying forces within a country in order to catalyze the ongoing immunication effort.

The creation of the Task Force and the activities of The Task Force are a reflection of the new interest that has developed in immunization, rather than a cause of that interest. The most important role played by The Task Force in the past 18 months might well be that it has provided a structure for quarterly meetings of the U.N. agencies and, thereby, fostered cooperation, quick reporting of activities, and a rapid coordinated change in direction of all agencies, when indicated.

This has allowed flexibility in program direction and the use of resources. The unparalleled expansion of interest and resources in the past 18 months, and particularly in the last 12 months, has been well served by this type of flexibility.

F. *The Response.*—The current response to the global need for immunization is laudable in terms of the number of agencies involved and the rapid increase in activities. The World Health Organization has pioneered programs throughout the world. The majority of countries in the world have some immunization activities. UNICEF has greatly stengthened its capacity to promote immunization, and has targeted immunizations as one of the key programs in its "child survival" strategy.

Last month, in celebration of the 40th birthday of the United Nations, many heads of state pledged their support to childhood immunization, setting a moral and political foundation for the goal of universal access to immunization by 1990.

Bilateral immunization activities are sponsored by many countries, and foundations, voluntary agencies and service organizations are increasingly selecting immunization as a key activity. Despite the great increase in interest, the percentage of children in Third World countries receiving a 3rd dose of DTP is only about 40 percent of all children needing immunizations. While we can take comfort in the rapid increase in coverage from 10 percent or less to approximately 40 percent, the inescapable fact is that most of the children of the world are still not protected by these technological marvels.

The lastest figures show that 98 percent of U.S. children are immunized. It is this success in the domestic program which provides hope for improved global coverage.

G. *Barriers.*—Current abilities and experience indicate there is much more that could be done to improve immunization levels. In addition, there are barriers that, if surmounted, could facilitate the process. These barriers can be classified under the general headings of "engineering," "biotechnical," and "operational."

Some problems appear to be straightforward engineering questions. If sufficient interest and resources were developed, answers could be expected in a relatively short-time period. For example, how do we improve and simplify the "cold chain," that is, the system that keeps vaccine cold from the time of manufacture through shipment and distribution until actually injected into a child under village conditions. It includes improvements in insulation material, power sources, devices for recording temperature, etc. Another engineering problem is the need for a simplified method of injecting vaccine. Answers could range from an inexpensive single-dose disposable needle and syringe to simplified jet injectors useful under field conditions.

Biotechnical barriers include the need to develop vaccines with more stability, ideally requiring no refrigeration at all. If the cold chain could be totally eliminated, operations would be greatly simplified. Improved vaccines that are not only more stable, but more potent, requiring fewer doses, and smaller quantities—vaccines with fewer adverse reactions—vaccines that could be combined physically—and vaccines that could be given earlier in life should be developed.

Operational barriers include the need for simplified surveillance systems, discovering what is needed to insure better compliance, better health education techniques, improved evaluation, simplified managerial programs, etc.

H. *What Needs to be Done?* A global structure is now in place to maximize collaboration of the U.N. agencies. Continuing efforts must be made to increase cooperative global activities not only of U.N. agencies, but bilateral government groups, voluntary agencies, service groups, etc.

More resources are still needed, but of even more importance now would be the availability of skilled managerial and field assistance.

While we are pleased by the prospects of new vaccine possibilities—malaria, leprosy, hepatitis A, rotovirus, herpes, etc.—an all-out effort must be made to increase field, operational and applied research to overcome the many barriers currently impeding the program. The 1990 objectives will be most influenced by our ability to improve on current delivery systems and improvement in reaching the children not now utilizing the immunization program.

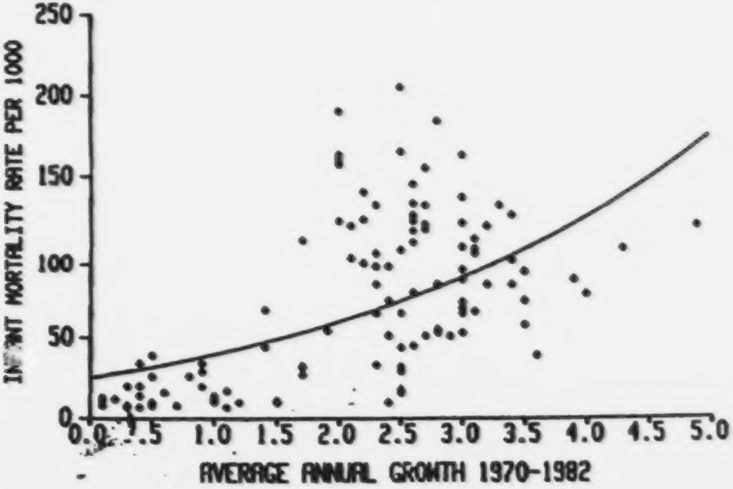
III. SUMMARY

In summary, while much still needs to be done to reach over one-half of the children of developing countries, great comfort can be taken in the speed of developments in the past 18 months. Coverage figures have improved from 10 percent to 40 percent of children now receiving a third dose of DTP, and WHO now estimates 60 percent of children receive at least one dose of some type of vaccine. If interest and resources are continued, it now seems possible to have immunizations available to all children of the world by 1990.

The United States has the opportunity to help catalyze a global effort to protect the children of this world. A response, in the spirit of the Marshall Plan, could have a decisive impact on the future of the world, promote medicine as an instrument of peace, and help Americans identfy as global citizens.

Mr. Chairman, this concludes my formal statement on the activities of the Task Force on Child Survival. I have attached for your information a summary of CDC activities in support of international immunization efforts, since you have also expressed interest in CDC's work in this area. I would be happy to answer your questions.

FIG. I - RELATIONSHIP BETWEEN INFANT MORTALITY RATES (1982) AND AVERAGE ANNUAL GROWTH (1970-1982) FOR 118 COUNTRIES



BEST FIT NON LINEAR CURVE $y=3666.39e^{.306x-4.586}$

CENTERS FOR DISEASE CONTROL SUPPORT OF INTERNATIONAL IMMUNIZATION—CHILD SURVIVAL ACTIVITIES

The Centers for Disease Control (CDC) continues to provide both short-term and long-term technical assistance internationally in support of the Expanded Program on Immunization (EPI) activities. The EPI is the WHO-supported program whose goal is to provide immunizations for all children of the world by 1990, with special priority given to those in developing countries. It was first endorsed by the World Health assembly in 1974, entered its active phase in 1977, and now counts more than 100 developing countries as participants.

Requests for assistance are generally received by CDC's International Health Program Office which serves as a focus for coordination. Requests are received from a variety of sources including the U.S. Agency for International Development (USAID) in Washington, USAID Missions abroad acting on their own initiative or at the request of the host country's ministry of health, and from international organizations which include member agencies of the United Nations family such as the World Health Organization and UNICEF. It is in our national interest to promote and assist aggressive immunization efforts abroad, not only because it is the appropriate humanitarian response to an international situation, but also to protect our citizens from exposure abroad and the potential for importation of disease into this country.

I. Short-Term Assistance to EPI

Short-term assistance by CDC to EPI activities is provided in response to a variety of requests ranging from: program planning and development, assessment of current program performance and service delivery levels, program management, development, and/or coordination of training efforts, assistance in program implementation, participation in periodic evaluation of established programs, epidemiologic consultation in efforts to establish EPI-target disease surveillance systems or to investigate and control EPI-target disease outbreaks.

Short-term assistance in provided primarily by either CDC Public Health Advisors, Medical Epidemiologists, or both. Details of personnel for direct technical assistance generally range in duration from 2 weeks to 3 months.

Some examples of short-term technical assistance in support of immunization-child survival activities include:

3-month assignment of Public Health Advisors to UNICEF to develop mass immunization campaign for Burkina Faso.

3-month assignment of Public Health Advisors of the Ministry of Health, India, at USAID request to develop measles immunization pilot programs in two States.

5-week assignment of Medical Epidemiologist to Chad at USAID request to prepare detailed plan of development and implementation of newly initiated immunization program activities.

2-week assignment of Public Health Advisor to WHO Southeast Asia Regional Office to refine coverage evaluation and survey procedures.

II. Long-Term Technical Assistance to EPI

A. The Combatting Childhood Communicable Diseases (CCCD program is an AID-funded effort to strengthen African health delivery systems to reduce childhood mortality, disability, and morbidity through improved prevention and control of childhood infectious diseases. The project was authorized in late 1981, and AID is providing $47,000,000 over an 8-year period.

The project has three implementing agencies: Centers of Disease Control (CDC) which has been actively involved in the project since its inception and primarily responsible for managing the technical elements of the project carried out thus far; WHO/African Regional Office whose involvement is increasing with the January 1985 signing of a grant-agreement with AID, to carry out intercountry training and strengthen the health information system (HIS) to support the other elements of the CCCD project; and the Peace Corps which provides technical cooperation in health education.

General priorities for CCCD were established through an assessment of epidemiologic importance, technical and logistical feasibility, and cost effectiveness and discussion with African Ministries of Health and the WHO Regional Office for Africa (WHO/AFRO) and include the diseases preventable by immunization (measles, pertussis (whooping cough), neonatal tetanus, poliomyelitis, diphtheria, and childhood tuberculosis).

B. CDC has provided technical support to AID-funded assistance with the Indonesia Expanded Program on Immunization since 1980 with the assignment of two long-term consultants in Indonesia: an pidemiologist, whose assignment concluded in 1984, and an operations officer who will serve with the project through 1987. Numerous short-term CDC consultants have provided specialized input into the project at the request of USAID and the Government of Indonesia.

C. Long-Term Assignments to WHO and UNICEF.—In addition to CDC assistance to AID-funded country activities, CDC has had long-term assignments to WHO and UNICEF. A medical Epidemiologist was assigned to Geneva headquarters of WHO to initiate the organization's Expanded Program on Immunization Office and has remained as the Director of that effort.

A second CDC Medical Epidemiologist was assigned in 1984 to WHO's South East Asia Regional Office to provided periodic technical assistance on the development of EPI programs and target disease surveillance within the 12 countries of the region.

Two CDC Public Health Advisors have been assigned to UNICEF to assist with Immunization Activities in Senegal and Nigeria.

III. Training Assistance

Before the WHO EPI program was established, most countries were already conducting some immunization activities. These differed from one country to another according to the national immunization policy and practices and the availability of resources. Training of health personnel was often limited to teaching physicians and nurses how to recognize the disease of concern and carry out the correct injection procedures. The planning, management, and evaluation of immunization programs received little or no attention.

It was clear, however, that the key to achieving high immunization coverage was to impart managerial skills to those dealing with EPI at the different levels of the health structure. Thus emphasis in training courses was placed on planning, management, implementation, and evaluation of national EPI programs. It was also clear that peripheral health workers were responsible not only for carrying out immunizations but also for other primary health care activities. The training course organized for this category or worker was therefore combined with training on other health subjects. In addition, it was stressed that the help of individuals other than those involved in the health sector should be enlisted for the promotion of immunization activities.

Thus training policy shifted from the sole use of formal lectures for the education of personnel to training in all aspects of organizing a national EPI program by self-learning methods. CDC's Center for Professional Development and Training developed a senior-level and mid-level module for training courses for WHO to meet this need.

The EPI Training Course for Senior-level Health Personnel is designed for senior health personnel, those who are in charge of formulating national policies, and designing programs to implement them. Apart from training participants in policy making and management skills, it also serves as an excellent opportunity to promote the EPI program and to establish contacts with EPI "focal points" in countries. Normally, this course is carried out as an inter-regional activity. Approximately 50 of these courses have been held, providing training to over 1,500 senior personnel from nearly every country in the world.

The EPI Training Course for Mid-level Health Personnel consists of a series of modules to impart the managerial, logistic, and technical skills necessary for carrying out a national EPI program. It is normally conducted at the national level, or in larger countries at the provincial level, but may also be converted into an intercountry course. This course has been presented over 400 times, covering most of the world with nearly 15,000 participants.

In most countries, WHO collaborates closely with UNICEF in organizing and financing these courses. Many of the courses are combined with training in other health programs such as diarrheal disease control, nutrition, maternal and child health, breastfeeding, and environmental health.

Five long-term international field epidemiology training programs (Thailand, Taiwan, Saudi Arabia, Indonesia, and Mexico) have been initiated with CDC collaboration and support. Although not directly tied to child survival and immunization activities, the field epidemiologists developed in these programs have had major roles in immunization action in their respective areas.

IV. Assistance in Vaccine Trials

CDC is involved in a number of activities related to improving vaccines. Following are some examples.

The majority of pertussis vaccines used in the world today are prepared from whole cells of Bordetella pertussis. Although the use of these vaccines has produced a maked reduction the incidence and severity of this disease, they have also been associated with local and systemic adverse reactions which have resulted in dramatic decreases in pertussis immunizations followed by increases in pertussis morbidity and mortality in some countries. Attempts to prepare improved pertussis containing vaccines have a long history, spanning over 40 years and have involved studies by many investigators and manufacturers both in the United States and abroad. CDC and other U.S. Public Health Service agencies are participating in the planning and design of a large clinical efficacy trial of acellular pertussis vaccines schedule to begin in Sweden in early 1986. The products used are expected to demonstrate improved safety over the currently available whole cell vaccines and to produce equal or greater efficacy. If successful, results from this trial will lead to the production of a new generation of safer vaccines with wider acceptance among populations in need of protection against pertussis.

CDC has also sponsored a large clinical trial of the improved more potent inactivated polio vaccine (IPV). The trial was conducted in 2-month-old children, half of whom received live oral polio vaccine (OPV) and half the improved IPV. Results from this trial confirm earlier studies demonstrating that the improved IPV can be relied upon to provide serologic evidence of protection in essentially all vaccines following two doses administered at an early age. Use of this product may increase in countries experiencing problems with either the safety or efficacy of currently available OPV.

In addition, CDC is involved in the further evaluation of a measles human diploid cell vaccine which has shown promising evidence of higher seroconversion than the current chicks in embryo vaccine in children immunized under 9 months of age. A clinical trial to fully evaluate this product is being planned. If successful, the availability of a vaccine which can protest young infants can be expected to have a major impact in reducing morbidity and mortality among highly vulnerable infants living in areas of high endemicity.

CDC has recently agreed to assist India in the establishment of a vaccine-preventable disease study center which would be used to clarify and to facilitate the evaluation of new vaccines of mutual benefit to the U.S., India, and other countries.

World Immunization News

November 1985

Vol. 1, No. 1

Protecting the World's Children/Cartagena

On October 14-16, 1985, approximately 90 world leaders and public health experts met in Cartagena, Colombia, to consider a global effort to protect the world's children from vaccine-preventable diseases. The meeting was a follow-up to the conference held in March 1984 at the Rockefeller Center in Bellagio, Italy.

The Colombian conference focused on current progress in accelerating and expanding childhood immunization programs, plans for meeting the WHO 1990 objectives for universal childhood immunization, and strategies for using programs to build better primary health-care systems.

The conference was attended by ministers of health and senior representatives from ten developing countries; heads and technical experts from the WHO, UNICEF, UNDP, The World Bank, and The Rockefeller Foundation; senior representatives of several bilateral government agencies; NGOs; and representatives of The Task Force For Child Survival.

Next month, WIN will summarize the conference speeches (see Agenda, p. 4). In a future issue of WIN, we will also publish information on how to obtain copies of the conference proceedings and the reports presented by developing countries.

What Is World Immunization News?

World Immunization News (WIN) is a newsletter published by The Task Force For Child Survival to keep the many people engaged in immunization efforts around the world abreast of the latest developments. Information contained in the newsletter will come from international organizations, such as the sponsors of The Task Force, non-government organizations, and country program activities, as well as individual program operators and scientific investigators in the field.

WIN will contain information about program operations and developments at the national, regional and international levels. It will also contain information about basic and applied research and other technical and scientific developments in the field of immunization.

WIN is not intended to replace any existing institutional newsletters or publications. It is intended to provide a means for people working in the field of immunization to exchange information and keep each other informed . . . to be a means of improving communication across organizational and institutional lines, as the immunization effort in the world accelerates.

In This Issue

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- PAHO Vows Hemisphere Polio-Free by 1990
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- A Letter on Universal Immunization of Children from U.N. Secretary General Pérez de Cuéllar
- U.N. Declaration Regarding Universal Child Immunization by 1990
- Agenda from the Cartagena Conference
- Quotable Quotes from the Cartagena Conference
- Dr. John Evans: Cartagena Conference Highlights
- Canada Pledges over $25 Million for Immunization

Sponsoring Agencies: WHO UNICEF World Bank UNDP RF

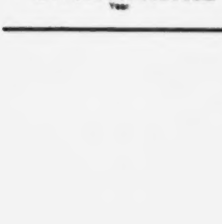
PAHO Vows Hemisphere Will Be Free of Polio by 1990

On May 14, 1985, Dr. Carlyle Guerra de Macedo, Director of the Pan American Health Organization (PAHO), announced the objective of a polio-free Western Hemisphere by 1990. The announcement followed a review by PAHO of the recent history of polio control efforts in the Hemisphere and the recommendations of an ad hoc advisory committee.

Polio eradication will be intimately associated with all aspects of the Expanded Program on Immunization (EPI). In both ongoing maintenance programs and special immunization days, it is recommended that polio vaccine always be given in combination with other EPI immunizations. In this way, the goal of polio eradication will contribute to the 1990 EPI objectives and the general improvement of primary health care.

The five-year program will require an additional $9 million per year — or $45 million more by 1990. Requests by PAHO for additional funds are currently being considered by Rotary International, the Inter-American Development Bank, USAID, and UNICEF.

Annual reported morbidity due to poliomyelitis Per 100,000 Population Americas 1968-1984



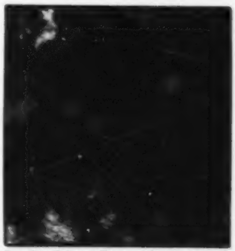
Colombia: Successful Mobilization for Immunization

In 1983, Colombia reported 89 cases of polio, 319 cases of neonatal tetanus, over 5,000 cases of pertussis and over 13,000 cases of measles! Less than 50% of children had received immunizations against these diseases. To halt such statistics, the country embarked on a bold plan to raise immunization levels by 50% during the second half of 1984.

Colombia is continuing to provide lessons on vaccination for all countries to consider.

The Ministry of Health organized a Technical Committee and an ad hoc committee in April 1984 to plan a National Vaccination Crusade to deliver DTP, polio, and measles vaccines on three special days in June, July and August of 1984. Subcommittees were developed to organize administration, vaccine, information, communications, community support and logistics. Twelve regional managers provided liaison between the Sectional Health Services and the Committee.

On each of the three days of the Crusade, President Betancur inaugurated the vaccination day by personally immunizing a child at the Presidential Palace. An unusual participation of both public and private sectors followed. Ministries of State, Education, Communications, Defense and the like joined church groups, the Red Cross, Boy Scouts and others to provide a national movement. The international community participated through WHO/PAHO, UNICEF, and UNDP. El Tiempo, a leading newspaper, and Caracol, the major radio broadcasting network, provided publicity, health education and a feeling of national involvement in the campaign. The image of Pitin was widely used to promote the campaign (see related story, p. 3).



President Belisario Betancur Cuartas opened the meeting "Protecting the World's Children/Cartagena," October 15, 1985.

By the end of the third special immunization day, coverage rates were reported to be over 72% for polio and DTP and 75% for measles in the under-four age group. The objective had been reached.

Evaluations will continue to determine the strengths and the weaknesses of such special immunization days. While it is recognized that such efforts could detract from ongoing immunization maintenance programs, they do have many benefits. Not only does the political commitment of the Head of State improve the success of the immunization program but it also strengthens the entire public health service. Special days provide unique opportunities to mobilize a large cross section of the population and to provide concentrated health education. But they also change the social norm for immunizations and provide many volunteers with the knowledge that they are improving the quality of life of their society. Colombia is continuing to provide lessons for all countries to consider.

Pitin: A National Symbol for Immunization in Colombia

The healthy, happy child you see depicted in the cartoon below may be unfamiliar to you, but in Colombia, he's famous. Called "Pitin," he's the symbol of a healthy child and thus, the National Vaccination Crusade.

The figure was produced in January 1985 by Orlando Prieto and Melba Rodriguez of the publicity agency Trazo Ltd. The image was adopted as the symbol of the first National Vaccination Crusade in April. The same month, he was named Pitin as the result of a national campaign organized by the Caracol Radio Network and *El Tiempo* newspaper. A child from Cali, Juan Rincon, suggested the winning name.

Most of the printed and video health education materials produced in Colombia use this figure, which there appears in bright, primary colors.

The use of Pitin by newspapers and television during the vaccination campaign was so successful that the image of Pitin has now been adopted as the symbol of the National Child Survival and Development Plan, initiated in January 1985.

Letter From The Secretary-General of the United Nations To Heads of State Concerning Universal Immunization of Young Children by 1990

The Secretary-General

10 June 1985

Excellency,

As we observe the 40th Anniversary of the founding of the United Nations, I should like to commend to your personal attention the contents of the enclosed resolution that was adopted unanimously by the UNICEF Executive Board at its recently concluded session.

The resolution articulates the possibility of achieving the goal of universal immunization of young children by 1990, through accelerated action in line with a goal already established by the World Health Assembly. The endeavour could result in saving the lives of several million children each year and in preventing a comparable number from suffering permanent disabilities.

Experience in several countries, some of which have doubled or even trebled their immunization rates in the recent past, has already shown that mobilizing a society's organizational and communications resources in support of an effective national immunization programme can have the most far-reaching cumulative effect. In particular, it can lend momentum to other primary health care approaches as supported by WHO and UNICEF. While much work remains to be done before the goals of the resolution are finally achieved, I am convinced that their reaffirmation in 1985 could have a significantly positive effect and I attach a brief background paper that elaborates this point.

With these considerations in mind I should like to express my hope, Excellency, that under your personal guidance your Government will reaffirm its commitment to these objectives in its statements during the 40th session of the General Assembly which will be held later this year. I am convinced that your leadership, in concert with that of other heads of government, would advance these most important efforts for the well-being of our children and the future of the world.

Please accept, Excellency, the assurances of my highest consideration.

Javier Pérez de Cuéllar

United Nations Declaration-October 25, 1985

"The respective Governments, through Heads of State and representatives assembled in the City of New York on the occasion of the Fortieth Anniversary of the Charter of the United Nations, have agreed that the safety and welfare of children is an investment in the future of all mankind, and have called for the full implementation of the worldwide programme of universal child immunization by 1990."

— Secretary General Pérez de Cuéllar

The Task Force For Child Survival

In March 1984, thirty-four world leaders participated in a conference sponsored by The Rockefeller Foundation in Bellagio, Italy, to consider the subject of better protecting the health of the world's children. At that meeting, the formation of the Ad Hoc Task Force for Child Survival was proposed and endorsed.

Technically, The Task Force has two organizational facets: The Task Force itself, and The Task Force staff. The Task Force consists of representatives designated by the sponsoring agencies: The World Health Organization (Dr. Ralph Henderson); UNICEF (Dr. Steve Joseph and Mr. Newton Bowles); The World Bank (Mr. John North and Dr. Tony Measham); The United Nations Development Program (Mr. Tim Rothermel and Dr. Mike Sacks); and The Rockefeller Foundation (Dr. Ken Warren).

The Task Force staff is located in Atlanta, Georgia, and consists of Dr. Bill Foege as Executive Director, Mr. Bill Watson as Project Manager, Ms. Carol Walters as Office Manager, and two secretaries. We have recently hired a consultant, Mr. Joe Giordano, whose primary responsibility is to work with UNICEF to assist with the Italian Initiative. We have also employed Dr. P. Diesh from India as a Special Consultant to The Task Force.

The Task Force staff reports to The Task Force representatives, and meets with them quarterly to review agency activities, coordinate future strategies, and select areas of special priority.

In the past year, Task Force attention has moved from concern regarding resources to questions regarding implementation. The Cartagena meeting realized the need for developing managerial skills for the delivery of immunization programs. Task Force interest in operational field research has steadily increased and priority will be given in the next year to this area. Finally, the Cartagena meeting emphasized the need for improvements in surveillance and evaluation techniques to better measure the impact of various implementation techniques.

AGENDA
Protecting The World's Children/Cartagena
October 14-16, 1985

Monday, October 14

CHAIRPERSON — DR. KENNETH S. WARREN

6:30 PM	OPENING SESSION - SPIRIT OF "BELLAGIO"

Tuesday, October 15

CHAIRPERSON — DR. KENNETH PREWITT
GENERAL SESSION

8:30 - 9:00 AM	WELCOME AND OPENING REMARKS	PRESIDENT BELISARIO BETANCUR CUARTAS
9:00 - 9:30 AM	GLOBAL OVERVIEW-EPI	DR. RALPH H. HENDERSON
9:30 - 10:00 AM	TASK FORCE UPDATE	DR. WILLIAM H. FOEGE
10:00 - 10:30 AM	QUESTIONS RAISED/ LESSONS LEARNED	DR. STEPHEN C. JOSEPH
11:00 - 11:30 AM	WESTERN HEMISPHERE PERSPECTIVE	DR. CARLYLE GUERRA DE MACEDO
11:30 - 12:30 PM	NATIONAL VACCINATION CRUSADE - COLOMBIA	DR. RAFAEL de ZUBIRIA

CHAIRPERSONS — DR. RAFAEL de ZUBIRIA
DR. TERESA ALBANEZ BARNOLA

MODERATOR — DR. JOHN R. EVANS

2:00 - 3:30 PM	COUNTRY PERSPECTIVES ON MEETING THE 1990 OBJECTIVES
4:00 - 6:00 PM	COUNTRY PERSPECTIVES (Continued)

WEDNESDAY, OCTOBER 16

CHAIRPERSON — DR. DONALD A. HENDERSON
GENERAL SESSION

8:30 - 9:15 AM	BASIC RESEARCH UPDATE	DR. KENNETH S. WARREN
9:15 - 9:45 AM	APPLIED RESEARCH NEEDS	DR. WILLIAM H. FOEGE
9:45 - 10:15 AM	OTHER ASPECTS OF PRIMARY HEALTH CARE	
	FAMILY PLANNING	DR. FRED T. SAI
	DIARRHEAL DISEASE CONTROL	DR. MICHAEL H. MERSON

CHAIRPERSON — DR. KENNETH S. WARREN

10:45 - 11:30 AM	FUTURE DIRECTIONS FOR CHILD SURVIVAL EFFORTS	DR. WILLIAM H. FOEGE
11:30 - 3:00 PM	DISCUSSION	
3:00 - 4:30 PM	COMMENTS	MR. G. ARTHUR BROWN MR. A.W. CLAUSEN MR. JAMES P. GRANT DR. HALFDAN MAHLER
5:00 - 5:30 PM	SUMMARY AND CONCLUSIONS	DR. JOHN R. EVANS RAPPORTEUR

BEST COPY AVAILABLE

Quotable Quotes On Child Survival Protecting the World's Children/Cartagena

"It is our duty to try everything in order to reconcile technical progress with moral progress. We have been chosen to construct; to find opportunities where others find problems; to give back to the world its confidence in life and development; to maintain alive the flame of humanism and hope."

— **Belisario Betancur Cuartas**
President of Colombia

"I think we have shown that we can, indeed, improve the delivery system by taking up the slack. By doing this we have every reason to believe that we can bring down the cost to such an extent that we should not have difficulties finding that marginal external support to keep on delivering the services."

— **Dr. Halfdan Mahler**
Director General, WHO

"It is time to promulgate a new law of emancipation to liberate those in the slavery of infant and child death. I do think we are at the beginning of something very, very exciting."

— **Mr. James Grant**
Executive Director, UNICEF

"To survive and to exist with health and dignity are the first obligations that Nature imposes on individuals and families. The main resource for development is mankind itself."

— **President Belisario Betancur Cuartas**

"It is only being present here that one can realize the enthusiasm that has been generated and the commitment to making a success of expanding the Program of Immunization so as to save the lives of so many millions of children."

— **Mr. G. Arthur Brown**
Associate Administrator,
UNDP

"The long way that Colombia has come in the field of infant survival shows us how immunization can be organized massively through great journeys as a great community commitment. We have done in our country in one year what in another way would have taken 5 years; time is the way to measure the work of man, the pulse of his will and his acts."

— **President Belisario Betancur Cuartas**

"The basic approach is to be responsive to the will of the sovereign nations of this world to protect their children, with the assistance of WHO, UNICEF, UNDP, The World Bank . . . and the Rockefeller Foundation as midwife and The Task Force as coordinator. The approach is pragmatic and transactional, being responsive to the unique needs and desires of the countries, and constantly responding to new developments and challenges."

— **Dr. Kenneth Warren**
Director, Health Services,
The Rockefeller Foundation

"I would like to reiterate the "Bellagio I" argument in favor of giving high priority to the least developed countries — the poorest-of-the-poor developing countries, especially in sub-Sahara Africa, where infant and child mortality are the highest in the world."

— **Mr. A.W. Clausen**
President, The World Bank

"Perhaps one of the most creative developments occurring in immunization worldwide is the transcending of institutional barriers which so often stand in the way of programs of this kind."

— **Dr. Kenneth Prewitt**
Vice President,
The Rockefeller Foundation

[redacted]

Conference Highlights: Some Observations From The Rapporteur

By John R. Evans, MD*

Just the fact that the most senior representatives of The World Bank, of the UNDP, WHO and UNICEF are taking time out of their schedule to spend 3 days at this conference to me is testimony that "Cartagena I" is extraordinarily important to each of them and their agencies, and that they have a deep and sincere commitment to the child survival revolution.

* * *

It is essential to stress the value of pragmatic evaluations learned from our mistakes and to share those experiences with others.

* * *

One of the great advantages of the network that is emerging is the way in which it is promoting technical collaboration among developing countries.

* * *

Political and social mobilization create for us a real window of opportunity, but it is of limited duration and it is going to be much more difficult to open a second time. The window makes possible the type of campaigns and extraordinary measures that we are seeing to accelerate the immunization. But while this window is open, it is imperative to build the credibility and effectiveness of the ongoing health services. Unless we can get that system firmly established, there will be no way of carrying the major burden of the future implementation of the EPI and the other critical interventions we have discussed at this conference that are part and parcel of primary health care.

---

* Dr. Evans — Chairman & Chief Executive Officer for Allelix, Inc., Ontario, Canada — was Rapporteur for the Cartagena Conference.

* * *

Don't try to do too much at once. It is an incremental process; it is difficult to paint the whole canvas at once. Secondly, select programs with a population perspective—the population perspective of disease burden—and try to select the kinds of interventions that have a high likelihood of success. Thirdly, build on existing strengths and national systems.

* * *

EPI must be regarded as an icebreaker, a leading edge of the child survival revolution, a marketable product that may have as its great dividend the ability to convince governments and donors to give higher priority to health in social development. It is measurable, it is concrete, and benefits should be identifiable in a reasonable time.

* * *

I think that the reports from individual countries were really highlights as far as all of us were concerned. In almost all of the reports, certain words or themes re-emerged: political will, social mobilization, involvement of the population and health infrastructure, the value of campaigns, some impediments in technology (in particular the cold chain), the overriding problem of management and its importance, the significance of evaluation, and the importance of financial need in order to establish these programs.

* * *

Bellagio I anticipated what might be done and took some first steps in that direction. Cartagena I has engendered a real sense of confidence and excitement that universal vaccination of children can be a reality for some nations by 1990 and perhaps for all later in that decade. The reports from all the countries present indicated a dramatic change in interest and attention to the expanded program of immunization.

Canada Pledges $ $ to Immunization

On October 16 at the Cartagena conference, Ms. Margaret Catley-Carlson, President of the Canadian International Development Agency, announced that the Canadian Government is pledging $25 million (Canadian dollars) to assist the Commonwealth Countries in immunization programs. An additional $2.8 million has been pledged to assist Colombia, she said.

World Immunization News (WIN)
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PREPARED STATEMENT OF JOHN L. SEVER, M.D., ROTARY INTERNATIONAL

Mr. Chairman, members of the Committee, I appreciate this opportunity to appear before the Select Committee on Hunger on behalf of Rotary International.

Rotary International is the world's first and most international association of service clubs.

A Rotary club is a group of men, representing the various businesses and professions in a community, whose purpose is to provide humanitarian service, encourage high ethical standards in all vocations, and help build good will and peace in the world.

There are more than 21,700 Rotary clubs in 159 countries and geographical regions. The first club was formed in Chicago in 1905. Today, more than two thirds of the world's Rotary clubs are located outside the U.S.A. Club membership stands at more than 993,000. We expect to reach the one million-member mark in February, 1986.

I cite these statistics to help the Committee understand the evolution of Rotary's commitment to world immunization. From the moment that Rotary became international, back in 1910, the association has sought ways to serve the world by furthering international good will and peace through friendship and cooperative educational and humanitarian programs.

Historically, these were club-to-club activities, criss-crossing the globe. Many remain so, such as clubs in one country helping clubs in other nations with material or technical assistance and the international exchange of high school youth. In 1947, the efforts expanded when the Rotary Foundation of Rotary International sponsored its first program for international scholarships. Exchange of teams of young professionals followed. A matching grant program for club-to-club humanitarian and educational projects was also launched.

As the network of clubs grew—both in geographical scope and in numbers—so grew the potential for service. Rotary began seeking larger challenges, projects beyond the scope of individual clubs or groups of clubs.

In 1980, Rotary launched its first major immunization project to protect six million Philippine children against polio. Rotary discovered that it could make it a difference. The World Health Organization reported that the number of polio cases in the Philippines, once the source of 45 percent of all polio cases in the Western Pacific, dropped nearly 70 percent.

Polio immunization projects in other countries have followed. To date, Rotary has allocated $12.33 million to protect more than 87 million children from polio in 26 nations. (Details of these projects have been provided to you with copies of my remarks.) Seeing the potential for a significant contribution, Rotary decided to make a commitment, this year, its 80th anniversary. A new Rotary Foundation program would be created. Rotarians, with public support around the world, would fund that program. Experts would be sent to help plan and implement immunization campaigns. And Rotarians in project countries would help mobilize the private sector into action. That is our plan. We call it PolioPlys—"plus" because Rotary, while devoting its major resources in the battle against polio, also wants to help, where feasible, expanded programs of immunization covering the six major vaccine-preventable diseases: measles, whooping cough, diphtheria, tetanus, tuberculosis and polio.

Rotary knows that its contribution is just part of a greater effort. As a nongovernmental affiliate of the World Health Organization, it works closely with WHO, with UNICEF, and with the Pan American Health Organization. But, it also knows that its contributionz—and the contributions of other nongovernmental organizations—are essential if UNICEF'S goal of Universal Child Immunization by 1990 is to be achieved.

That goal must be achieved. As others have already testified, every year vaccine-preventable diseases kill more than 3.5 million children and permanently disable another 3.5 million.

My testimony will take about 15 minutes. In that time, some one hundred lives will be extinguished and another one hundred lives diminished by disability.

These children die, not because there are no tools to prevent it. These children are disabled, not because there are no resources available. They die or become disabled because, until now, we—as members of the human family—have lacked the will to prevent this inexcusable tragedy.

This is changing. Last May, the Pan American Health Organization declared that by 1990 polio could be controlled in the Western Hemisphere. Last month, UNICEF declared all six major diseases could be controlled worldwide. Around the world, national leaders are declaring their commitment to the health of their children. But an international partnership of private and public efforts is crucial to getting the job done.

In the more prosperous nations these six vaccine-preventable diseases are well under control. The prosperous nations—through governmental and private efforts—can play a vital role to help improve health conditions in economically less-developed countries. These nations cannot effectively function when 100 out of every 1,000 of their children die before their first birthdays. They need help. That help will produce healthy children. Healthy children become the productive adults needed to create social and economic stability which, in turn, will help build a more peaceful world.

What can the private sector do? Here's what Rotary is pledged to do. Perhaps it can serve as a model for others.

1. Rotary will provide all the polio vaccines necessary for up to five consecutive years for any approved national or regional immunization program—either as part of annual national days of immunization against polio or through other delivery tactics, in overall support of WHO's Expanded Program on Immunization (EPI).

2. Rotary will make available to any less-developed country, upon invitation, experts to help assess, plan, implement, and evaulate annual national days of immunization against polio. In each country targeted for such campaigns, a committee of Rotarians, in conjunction with Rotary's expert team and national and local health officials, will seek to motivate and utilize resourcesof the private business and professional sectors.

3. Rotary will support, where possible, the Expanded Program on Immunization to fight other controllable diseases. An example of this support is soliciting, transporting and distributing to developing nations excess but viable vaccines from pharmaceutical firms.

The work has already begun. Our first expert, Mejico Angeles Suarez, vice-minister of public health for the Dominican Republic, was sent to Paraguay, at the request of that government, to help organize national immunization days. The first of two scheduled in 1985 took place September 28th. Surveys had revealed that there were 275,000 children under the age of four who should receive vaccine. On September 28, more than 475,000 children, including many over the age of four, were immunized.

The local Rotarian who coordinated support for this project is Jose Martinez Yaryes. In a report to Rotary International, Sr. Martinez listed a few organizations which contributed to this effort. The ministries of education and the interior enlisted the cooperation of teachers and provincial governors. Military Air Transport transported material. The Association of Advertising firms in Paraguay prepared a publicity campaign. Coca Cola printed posters and leaflets. The Association of Pharmaceutical Manufacturers provided trucks for transporting materials. Other local firms provided headquarters space, photocopy equipment, even coffee for workers. The U.S. Agency for International Development provided some office equipment.

More than 19,000 volunteers helped implement this project. They included Rotarians, their wives, members of Lions clubs, Girl Scouts, and Paraguayan Red Cross, the Rural Association of Paraguay, and the Junior Chamber of Commerce.

The second national immunization day is set for this coming Saturday, the 16th of November. Rotary support—help in mobilizing the private sectors and the $90,500 worth of polio vaccine—will continue over the next five years, after which the Paraguayan government will assume responsibility for maintaining the immunization program.

I have provided details on this project to illustrate how PolioPlus works and the key role that the private sector plays in carrying out this kind of project.

This project distributed only polio vaccines. In other projects, already underway in Nigeria, Sudan and Turkey, Rotary is providing polio vaccine and private sector support for expanded programs of immunization.

Rotary is an organization of volunteers. And volunteers know how to recruit volunteers. It is this aspect of the current immunization scene—more formally known as social mobilization—that has led UNICEF, PAHO, and other world organizations and governments to believe that the goal of Universal Child Immunization by 1990, first set by the World Health Organization in 1974, may indeed by achievable.

Rotary will raise $120 million to fund the PolioPlus Program. This fund-raising goal—by far the largest in Rotary's history—expresses Rotary's commitment and reveals Rotary's belief in the private sector's concern and wllingness to support worldwide immunization with money as well as time, energy, expertise, and other resources.

In conclusion, Rotary believes it can raise the money and launch the projects which will comprise a significant contribution to the efforts to achieve Universal

Child Immunization by 1990—a significant contribution, but not nearly enough for the whole task. So Rotary hopes that what it is doing will serve as a model for other private organizations and that a powerful partnership will soon be formed between the private and public sectors—governments of all nations—to immunize our children. We can't wait any longer. I have spoken for some 15 minutes. One hundred children have died.

Thank you.

List of Approved Polioplus Projects

Argentina—Polio vaccines for one year of immunization in Argentina, reaching 1,420,000 children age 0-24 months altogether, to meet immediate needs of pending establishment of polio vaccine manufacture in Argentina, US$213,000.(85-19)

Belize—Cold chain and training to support immunization of all children of Belize aged 3 months to 4 years (35,000 children altogether) against polio and other diseases. Members of the Belize Rotary clubs and their wives are involved in training and follow-up with local families. US$51,200.(84-18)

Bolivia—Immunization of 425,000 children in 12 major cities over five years, with the participation of local Rotarians. Spanish Rotarians have donated vaccines. US$104,000.(81-2)

Costa Rica—Immunization of 500,000 children of Costa Rica against polio over a five-year period, including 60,000 newborn children per year for five years, plus 200,000 additional children the first year. US$50,000.(83-1)

El Salvador—Extension of polio immunization to a total of 1,454,000 children over five years, including all children in El Salvador under three years of age plus boosters for older children. Rotarians participate in national days of immunization. US$274,000.(85-10)

Gambia—Immunization of 200,000 Gambian children against polio over five years. Rotarians help establish and publicize immunization clinics and educate the public about the need for immunization. US$50,500.(82-3)

Ghana—Immunization against polio of all children of Ghana under one year of age for five years (1,875,000 children in all). The project involves provision, transportation, and distribution of vaccines and assistance in rural education programs organized by the Ghana Ministry of Health. US$374,000.(84-12)

Guatemala—Vaccines to immunize against polio all children of Guatemala below five years of age, for five years (1,920,000 children altogether). US$378,600.(84-13)

Haiti—Immunization of 300,000 children against polio, diphtheria, whooping cough, tetanus, and tuberculosis; 240,000 additional newborns against polio; and 300,000 women against neonatal tetanus. Haitian Rotarians are assisting in the five-year project. US$196,000.(81-1)

Honduras—Five-year immunization project to protect all Honduran children under one year of age (1,098,000 children in all) against polio. The grant will provide three doses of oral Sabin vaccine for each child, cold chain equipment, and paper supplies such as registration materials. US$207,500.(84-3)

Liberia—Immunization against polio of approximately 269,000 children of Liberia in the age range 0-5 years. Members of the Rotary Clubs of Nimba and Monrovia and their wives are participating in immunization activities. US$56,800.(84-2)

Malawi—Immunization of 1,711,000 children against polio over five years, as part of the national Expanded Program of Immunization. US$302,700.(85-15)

Mexico—Polio vaccines for two years plus refrigerators, for use in mass immunization campaigns to reach 18,050,000 children altogether. US$1,245,000.

Morocco—Immunization of some five million Moroccan children against polio, with participation of Moroccan Rotarians. The five-year project aims to assist the Moroccan Ministry of Health in the establishment of an ongoing immunization program. Italian Rotarians have donated vaccines. US$734,600.(82-1)

Nigeria—Vaccines to immunize all children in Nigeria up to twelve months of age against polio for five years (21,150,000 children altogether). US$2,810,000.(85-9)

Panama—Extension of Panama's EPI program to geograhically and culturally isolated populations, through a massive promotional campaign and transport of immunization personnel, in order to achieve nationwide immunization coverage. More than 400,000 newborn children will be immunized altogether. US$537,000.(85-8)

Papua New Guinea—Provision of refrigerators and other cold chain to immunize some 650,000 children against communicable diseases over a five-year period. US$90,500.(85-17)

Paraguay—Polio vaccines and additional support for possible Polio Annual National Days of Immunization in Paraguay, to reach approximately 702,000 children over a five-year period. US$206,500.(85-16)

Philippines—Five-year project to immunize six million children against polio, with participation of local Rotarians. Italian Rotarians have donated vaccines. Project completed. US$760,000.(79-2)

Saint Lucia—Immunization of 4,000 infants per year for five years against polio (20,000 total) and for three years against measles, mumps, and rubella; and of all school age girls (10,000 per year) for three years against rubella. Altogether 50,000 children will be immunized against one or more diseases. US$66,000.(85-1)

Senegal—Immunization of all children born in Senegal over a five-year period (1,250,000 children altogether). The grant pays the costs of oral polio vaccine, cold boxes, ice packs, refrigeration thermometers, and gasoline for the transportation of immunization teams. US$219,000.(84-0)

Sierra Leone—Five-year immunization project to protect a million children of Sierra Leone against polio. Rotarians and their wives travel throughout the country to assist in distribution. Rotarians of District 654 (Indiana, U.S.A.) are cooperating in the project. US$165,000.(82-2)

Sundan—Polio immunization coverage of all children below 15 months of age, in accessible urban and rural areas of Sudan. The five-year project includes provision of vaccine for three doses per child for the 1.2 million children of the project area, expansion of cold chain facilities, and education, especially for mothers, on the need for immunization. US$236,000.(84-11)

Turkey—Polio vaccines for five years in support of the Expanded Program on Immunization, reaching a total of 15 million children. US$2,110,000.(85-18)

Uganda—Extension of portion of national Expanded Program on Immunization to reach a total of 570,000 infants nationwide over a five-year period. US$3,480,000.(85-14)

Zambia—Five-year polio immunization project to protect 2,200,000 children (all the children in Zambia age 2 months to three years) in conjunction with Zambia's Expanded Program on Immunization. US$367,000.(84-1)

Donated vaccines—Utilization of excess vaccines that manufacturers, or ministries of health, cannot use or market before the expiration date. The grant pays for transportation, and Rotarians help with distribution. US$72,300.(79-3)

Polio expert teams—Expenses of expert consultants to advise national governments and Rotarians, on request, in the organization of Polio Annual National Days of Immunization (PANDI) campaigns. US$200,000.(85-7)

POLIOPLUS TO IMMUNIZE THE CHILDREN OF THE WORLD

THE SCOPE OF THE PROBLEM

Polio still strikes nearly half a million children every year, crippling one in every 200 children born in the developing world. The World Health Organization (WHO) estimates that fewer than 25% of the children in developing nations are fully immunized against polio, measles, diphtheria, tetanus, whooping cough, and tuberculosis. As a result, more than 3.5 million children die and another 3.5 million are disabled annually.

THE POLIOPLUS PROGRAM

Rotary International has pledged to promote and assist polio immunization of all children worldwide no later than 2005, its centennial, and to raise U.S. $120 million to fund this effort. It will also support, where possible, expanded programs of immunization (EPI) to fight the other vaccine-preventable childhood diseases. Rotary is conducting immunization projects in economically less-developed countries in cooperation with WHO, the United Nations Children's Fund (UNICEF), and appropriate national, regional and local authorities and agencies.

To date, The Rotary Foundation of Rotary International has allocated U.S. $12.33 milllion for polio immunization projects in 26 nations to protect more than 87 million children. It launched its first major polio immunization project in the Philippines in 1980 to protect six million children. Measuring the impact of the first two years' effort, WHO found a 68% drop in polio cases.

The Foundation provides up to five consecutive years' vaccine for approved national or regional immunization programs. It also fields experts to help plan and implement annual national days of immunization against polio. Local Rotarians enlist the resources of the private business and professional sectors to help carry out immunization campaigns and help promote public participation.

Each of the projects seeks to immunize children (usually newborn to five years of age), strengthen primary health delivery systems, and educate parents about the need for immunization. Different techniques are used in different countries. During national days of immunization, health workers and volunteers may administer vaccines in homes or at immunization posts. In other countries, vaccine is distributed to existing health centers and ongoing promotional campaigns conducted to encourage parents to have their children immunized.

DISTRIBUTION OF DONATED VACCINE

To date, The Rotary Foundation has distributed more than nine million doses of various vaccines (donated by pharmaceutical houses and by Rotarians in Italy, Norway, and Spain) to 20 countries in Latin America, Africa, and Asia.

OTHER ROTARY EFFORTS

Rotary clubs and districts conduct local and regional immunization projects. Rotarians in at least 10 developed nations are known to be providing support for local Rotary immunization efforts in developing countries in Asia, Africa and Latin America. The Rotary Foundation has allocated more than U.S. $125,000 for 10 of these projects.

In southern India, Rotarians have immunized more than 3.5 million children against measles and are extending the project to protect an additional 2.5 million. The project is co-sponsored by the Canadian International Development Agency, Canadain Rotarians, and a U.S. $209,275 Rotary Foundation grant.

Countries and estimated number of children to be covered [1]

Philippines [2]	6,000,000
Haiti	540,000
Bolivia	425,000
Morocco	5,000,000
Sierra Leone	1,000,000
The Gambia	200,000
Costa Rica	500,000
Senegal	1,250,000
Zambia	2,200,000
Liberia	269,000
Honduras	1,098,000
Sudan	1,200,000
Ghana	1,875,000
Guatemala	1,920,000
Belize	35,000
St. Lucia	20,000
Panama	400,000
Nigeria	21,150,000
El Salvador	1,454,000
Uganda	3,480,000
Malawi	1,711,000
Paraguay	702,000
Papua New Guinea	650,000
Turkey	15,000,000
Argentina	1,420,000
Mexico	18,050,000

[1] As of October 1985, listed in order of approval.

[2] Completed project.

IMMUNIZING THE WORLD'S CHILDREN BY 1990

MALNUTRITION AND INFECTIOUS DISEASES—THE PROBLEM

Every minute eight children under the age of five die in the developing world of six diseases: measles, tenanus, whooping cough, tuberculosis, diphtheria and polio. Eight other children are crippled or rendered deaf, blind or mentally retarded.

Malnourished children are the most quickly affected, and are much more likely to die from these diseases than well-fed children.

The World Health Organization estimates that the present annual death toll among children in developing countries from these six diseases is 3.6 million.

Two children out of 10,000 die of measles in the United States, but in the developing world measles kills three out of 100. Measles interacts with malnutrition to quickly and quietly kill children.

Many malnutrition-related deaths could be averted if vaccine for these six leading killer diseases were made available to the world's children.

MALNUTRITION AND INFECTIOUS DISEASES—ONE SOLUTION

Vaccines are cheap and constantly becoming cheaper: the total package of vaccines for the six leading child killer diseases costs about 14 cents. Five dollars per child will cover not only vaccines, needles, syringes, and cotton, but assorted costs for equipment, staff, transport, fuel, etc.

When many world leaders met at the United Nations during the week of October 21, 1985, worldwide immunization programs was one of the few topics of agreement discussed. Many leaders highlighted their immunization achievements or plans in their address to the General Assembly of the United Nations.

Developing countries contribute, on the average, 80% of the total costs for immunization programs. Donor governments and agencies provide about 20%.

UNICEF estimates that the goal of universal access to immunization programs by 1991 would be possible with commitment of $5 billion for vaccination programs over the next five years. $1.2–$1.5 billion would be provided as international aid.

In 1984 and 1985, with the full commitment of political leaders in such diverse countries as Brazil, Burkina-Faso, China, Colombia, El Salvador, Indonesia, Nigeria and Pakistan, remarkable increases in immunization rates were achieved.

The government of Italy recently made a special donation of $100 million to UNICEF for immunizations and related activities in Africa. The government of Canada has commited $25 million for the Commonwealth nations at this time, with plan to double that financial commitment next year for programs in French-speaking African countries.

The United States is currently involved in this effort through funding for the AID health assistance program, the Child Survival Fund, and contributions to UNICEF. American private organizations, including Save the Children, African Medical Research Foundation, and Rotary International, are significantly involved in immunization programs as well.

The Targets: Six Diseases That Threaten Children

Measles: Without vaccination, virtually all young children in developing countries catch measles. About 3 percent of those, more than 2 million a year, die from the viral disease or its complications, which include pneumonia, blindness, deafness and malnutrition. Mortality rates from measles among children already malnourished can rise to 10 percent or higher.

Tetanus: Caused by a bacterial toxin, tetanus can strike at any age but takes its greatest toll among rural newborns who are exposed by the unsterile cutting of the umbilical cord or the use of contaminated mud, ashes or dung as a poultice on the umbilical stump. Infected newborns become unable to suck, swallow or breathe and 85 percent of untreated patients die. Neonatal tetanus kills nearly one million infants every year.

Pertussis: This bacterial infection of the respiratory tract strikes 80 percent of unprotected children. Also called whooping cough or the "hundred-day cough," pertussis kills, either directly or by precipitating pneumonia or malnutrition, about 1.5 percent of children in developing countries who catch it, more than half a million annually.

Poliomyelitis: More a crippler than a killer, the polio virus spreads mainly through contact with food and water contaminated with excreta. Only a small fraction of those infected develop paralysis, but several hundred thousand children in poor countries are still lamed annually. Polio can spread more viciously as sanitation improves and fewer children are infected in infancy, when they are partly protected by maternal antibodies; epidemics of paralyzing polio can then strike unvaccinated older children.

Diptheria: Although its prevalence is poorly documented, diphtheria, a bacterial infection that can kill by damaging the cardiovascular and nervous systems, is an increasing threat in some developing countries. Mild skin infections with the bacteria were once common, creating immunity, but with improved living conditions the frequency of mild cases id declining, permitting serious epidemics.

Tuberculosis: The disease is most common among adolescents and adults, but tuberculosis, especially the form known as TB meningitis, also kills tens of thousands of children each year.

The vaccines: DPT is a combined vaccine against diphtheria, pertussis and tetanus. BCG vaccine protects against tuberculosis, measles and polio; according to the World Health Organization, measles vaccines and polio vaccines are sometimes administered independently instead. Tetanus toxoid is given to adults, especially women of childbearing age since this also protects their newborns during their vulnerable first weeks, the health agency says. The DPT and oral polio vaccines are usually administered 3 times at monthly intervals in the early months of life. The measles vaccine is given at about the age of 9 months; before then the infant's natural immunity renders it ineffective.

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